

**FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-7374**  
**PUGET SOUND NAVAL SHIPYARD**

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*PUGET SOUND NAVAL SHIPYARD*

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## **INTRODUCTION**

This fact sheet is a companion document to the draft State Waste Discharge Permit No. ST-7374. The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of wastewater to the City of Bremerton POTW. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.160) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. This statute includes commercial or industrial discharges to sewerage systems operated by municipalities or public entities which discharge into public waters of the state. Regulations adopted by the state include procedures for issuing permits and establish requirements which are to be included in the permit (Chapter 173-216 WAC).

This fact sheet and draft permit are available for review by interested persons as described in Appendix A—Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response.

<b>GENERAL INFORMATION</b>	
Applicant	US Navy
Facility Name and Address	Puget Sound Naval Shipyard Building 427, 2 <sup>nd</sup> Floor Code 106 1400 Farragut Avenue Bremerton, WA 98314-5001
Type of Facility	Naval Shipyard
Facility Discharge Location	Latitude: 47° 33' 54" N Longitude: 122° 38' 04" W
Treatment Plant Receiving Discharge	City of Bremerton POTW
Contact at Facility	Name: Duy Pham, Environmental Engineer Telephone #: (360) 476-0118
Responsible Official	Name: Captain John Orzalli Title: Shipyard Commander Address: Puget Sound Naval Shipyard Bremerton, WA 98314-5001

## **BACKGROUND INFORMATION**

### *DESCRIPTION OF THE FACILITY*

The Puget Sound Naval Shipyard was established in 1891. Although the shipyard has been engaged in the construction of vessels in the past, no construction of new vessels is performed at the yard now. The main activities performed by the shipyard include repairs and refitting of vessels and the breaking up (disposal and recycling) of ships and submarines, including those with nuclear-powered propulsion systems that have reached the end of their useful lives.

The main industrial processes at the shipyard which create wastewater include the extensive metal plating shop, contaminated dry dock storm water runoff, contaminated dry dock process water (e.g., pressure washing and hydro-blasting), and bilge water. Many other minor sources of wastewater exist at the facility. Examples of these minor uses include photo-processing, grinding, valve cleaning, lagging tool cleaning, paint brush cleaning, hose pressure cleaning, and braze flux flushing. In addition to those industrial discharges, there are a large number of commercial/large scale semi-domestic discharges including those from car washes, galleys, washing machines, and barracks heating boilers.

Plating shop rinse water, as well as other metal contaminated wastewaters, is disposed of to the main pretreatment building in which metals and cyanide are removed.

Many of the other wastewaters are directly disposed of to the sanitary sewer. Some of these wastewater streams are tested prior to disposal and disposed of either as hazardous waste (shipped to a TSD facility), transferred to Building 871, or are discharged to the sanitary sewer, based on the test results.

Five oily water treatment systems (OWTS) located at various locations at the shipyard are used to treat bilge water. The bilge water is discharged to the sanitary sewer following treatment. The same systems are also utilized to treat certain other wastewaters such as dry dock wastewater where appropriate. Four of the bilge water treatment systems utilized dissolved air flotation to effect removal of pollutants. One of the bilge water treatment systems (OWTS #5) utilizes a clarifier sedimentation unit.

The discharges from Building 871 are subject to the most stringent of local limitations and the categorical pretreatment standards. In addition, the passivation wastewaters are subject to the most stringent of these standards.

The discharges from most other areas will be subject to local limitations - only.

Contaminated dry dock stormwater and hydro-blast and pressure wash waters generated at dry docks are treated mainly by wastewater filtration equipment (WWFE) consisting of a 250 micron rotary strainer followed by a one micron pressure filter. The filtration system is used for most dry dock wastewater due to the fact that most dry dock

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wastewater contaminants, such as paint chips and sandblast grit, are expected to be particulate in nature. In cases in which oils or organic materials are expected, the dry dock water may be treated at one of the Oily Water Treatment Systems.

A number of stormwater and power plant cooling water discharges are made directly to Sinclair Inlet. These direct discharges are covered under the NPDES permit issued by USEPA. USEPA is the permitting authority with respect to the shipyard's NPDES permit, due to the fact that the shipyard is a federal facility.

*LISTING OF AUTHORIZED DISCHARGES AND THEIR ASSOCIATED FLOWS*

The following table contains a summary of the industrial flow authorized by this permit and their associated maximum daily flow rates. The industrial processes are described in greater detail in later sections of this fact sheet. Certain restaurant and laundry discharges listed below are authorized by the proposed permit, but have not been given separate sample numbers, and are not listed separately in the permit, due to their largely domestic nature. The flow limitations in the table below are intended to reflect the maximum daily flows associated with each discharge, as opposed to flow limitations. In those cases in which flow limitations have been established in the permit, the daily maximum flow limitations are indicated in bold in the table below.

<b>LISTING OF DISCHARGES AND THEIR ASSOCIATED FLOWS AS AUTHORIZED UNDER PROPOSED PERMIT FOR PUGET SOUND NAVAL SHIPYARD</b>			
<b>WDOE SAMPLE POINT NO.</b>	<b>NAVY SAMPLE POINT NUMBER</b>	<b>DESCRIPTION OF SOURCE OF WASTEWATER</b>	<b>DAILY MAXIMUM (bold numbers indicate flow limitations established in permit)</b>
1.	910-871-001	Building 871 Industrial Pretreatment	<b>82,000</b>
2.	910-871-002	Building 871 Industrial Pretreatment Cyanide	<b>30,000</b>
3.	38-58-003	Oxygen System Cleaning with Non-Ionic Detergents	200
4.	38-58-004	Oxygen System Cleaning with Non-Organic Cleaner	100
5.	38-58-005	Oxygen System Piping Cleaning with Non-Organic Cleaner	200
6.	38-58-006	Oxygen Clean Room Washer	45
7.	56-107-024	Hydro-testing, Solder Flux Flushes/TSP Flushes - Common Sample Point	25,000
8.	56-107-026	Pipe Test Stand Area Common Sump (combined sample point for 56-107 008,020,021,022, and 025)	2,750
9.	67-290-001	Electronics Parts Wash. Sinks	50
10.	134-371-004	Metallurgical Sample Salt Water Bath Vapor Condensation	10
11.	51-427-002	Rotoclone Water from Plastic Cutting	300
12.	06-431-004	Gauge Leak Tester (1 <sup>st</sup> floor pneumatic tool room)	90
13.	06-431-007	Plug and Part Dishwasher	24
14.	06-431-008	Air Filter Wash Water	20
15.	31-431-A28-001	Ultrasonic Parts Cleaning Tank	40
16.	31-431-DOOR1- 002	Water Jet Cutting	1,000

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17.	31-431-Mez-003	Parts Hydrotesting	120
18.	31-431-004	Pump/Valve Test Closed Loop	200
19.	31-431-006	Valve Hydro-testing	200
20.	56-431-023	Ion Exchange Regeneration Wastewater/Boiler Blowdown and Steam Condensate	7200
21.	67-431-407A-002	Circuit Board Rinses	100
22.	67-431-408B-003	Photo Darkroom Development	625
23.	67-431-414B-004	Electronic Cabinet Wash Down	200
24.	67-431-510-005	Dish Washers for Circuit Boards	200
25.	67-431-Gauge Room 006	Gauge Cleaning Sink	40
26.	67-431-Room 526-008	Gauge Cleaning-Freon Eductor Pump	1,300
27.	67-431-009	Air Pump Washing	5
28.	67-431-010	Evaporating Dish Cleaning	6
29.	67-431-011	Flow Calibrators	15
30.	135-431-203-001	Photo Developer Parts Maintenance Cleaning	40
31.	135-431-203-002	Non-Destructive Testing X-Ray Development Rinse water	200
32.	431-NTDS	Non-contact Cooling Water at Naval Tactical Data Center	3,350
33.	51-435-001	Braze Flux Rinsing Sink	20
34.	1113-435-001	Cafeteria Food Preparation Kitchen Grease Trap Discharge	2,500
35.	820-437-001	Auto Hobby Shop – Auto Parts Stream Cleaning	200
36.	06-452-001	Respirator/Face Shield Washing	300
37.	37-452-001	Forge Shop Quench Water	100
38.	37-452-002	Non-contact Cooling Water for Furnace Fans	100,000
39.	37-452-003	Forge Hammers Steam Condensate	1,000
40.	134-453-002	Dissolved Oxygen Ampoule Testing Solution	50
41.	02-455-001	Transportation Shop Mech. Car Wash Facility	1,200
42.	02-455-004	Transportation Shop-Hand Car Wash Facility	600
43.	98-455-001	Parts Steam Cleaning	600
44.	71-457-001	Ball Valve Teflon Coating Quench Tank	200
45.	71-457-002	Varnish Room - Glass Face Shield Belt Sander Trickle Water	20
46.	71-457-003	Varnish Room - Glass Face Shield Cutoff Saw Trickle Water	50
47.	71-457-004	Silk Screen Washing with Ivory Scouring Powder	100
48.	26-460-002	Deionized Water Production Backwash	300
49.	99-462-001	Regulator/Hose Test Steam Condensate	100
50.	99-462-002	Braze Quench Sink	100
51.	99-462-003	Plumbing Valve Sterilization Trough	100
52.	99-462-004	High Pressure Hose Testing and Sterilization Trough	400
53.	99-462-005	Fresh Water Hose Flush	400
54.	99-462-007	High Pressure Air Hose Flush	15
55.	37-469-001	Propeller Dye Penetrant Testing Rinse	120
56.	740-480-001	Diver Shop Laundry Room	45
57.	06-495-001	Welding Equipment Wire Filter Ultrasonic Cleaning	1
58.	26-495-01	Gas Hose Leak Test Tank	10

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59.	67-500-001	Sonar Cleaning Soak Tank	100
60.	67-500-002	Sonar Hydro-test Tank	600
61.	820-502-002	Latex Paint Brush Cleaning Sink	100
62.	820-502-005	Latex Paint Brush Cleaning Sink	100
63.	NDC-506-001	Dental X-ray Film Development Rinse Water	100
64.	NDC-506-002	Dental Unit Wastewater	1
65.	900SCE-818-001	Air Compressor Cooling Tower Blowdown	1,000
66.	800-847-002	Bachelor Officer Quarters Laundry Room	1,200
67.	1385-850-003	Microfilm Developer Silver Recovery Unit	30
68.	203-850A-001	Photo Development Film Processor	16
69.	203-850A-005	Waterless Color Paper Development Still Condensate	1
70.	56-856-001	Pipe/Pump Hydro-testing	200
71.	90-856-001	Braze Flux Hot Water Soak Tank	1,800
72.	90-856-002	Pipe/Tubing TSP Cleaning Rinse water	2,000
73.	90-856-003	Ultrasonic Parts Cleaner	30
74.	17-857-002	Passivation Hot Water Rinse	600
75.	17-857-004	Oakite 160 Etch Cold Water Rinse	1,200
76.	17-857-006	Oakite LNC Cold Water Rinse	1,200
77.	17-857-007	Oakite LNC Hot Water Rinse	600
78.	17-857-008	Total of Discharges from Passivation Process	<b>8,400</b>
79.	ROTO-17-857-001	Rotoclone for Photoetch Area	7,800
80.	ROTO-17-857-002	Rotoclone for Aluminum Passivation Room	10,700
81.	ROTO-17-857-003	Rotoclone for Welding Area	10,700
82.	ROTO-17-857-004	Rotoclone for Baking Oven	2000
83.	500-863-001	One Hour Film Development (Developer)	10
84.	500-863-002	One Hour Film Development (Fixer)	10
85.	800-865-001	BEQ Laundry Room	3,800
86.	815-866-001	Food Preparation Galley Grease Trap	400
87.	815-866-002	Dining Facility Dishwasher	1,500
88.	31-873-002	Buffer/Bandsaw Rotoclone	50
89.	90-874-001	Paper Shredder Dumpster Dust Suppression Water	200
90.	90HM-874-004	Portable Tank and Tanker Truck Hydro-testing	5,000
91.	99-875-001	Sewage/CHT Hose Cleaning	10,000
92.	99-875-002	High Pressure Testing of Hoses	5,000
93.	800-885-001	BEQ Laundry Room	2900
94.	900SCE-900-001	Air Compressor Cooling Tower Blowdown	900
95.	953-900-002	Diesel Generator Cooling Tower Blowdown	5000
96.	900SCE-923-001	Air Compressor Cooling Water	500
97.	063-940-213-004	Medical X-Ray Film Development	200
98.	800-942-001	BEQ Laundry Room	2900
99.	90HM-944-001	Rainwater Holding Tank in the Hazardous Waste Container Storage Area	2000
100.	07-961-001	Storm Drain Cleaning Dewatering	100
101.	800-985-001	Little Mates Child Care Laundry	360
102.	800-1000-001	BEQ Laundry Room	3,800

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103.	800-1001-001	BEQ Laundry Room	3,800
104.	800-1005-001	NEX Laundromat	2,700
105.	815-1015-001	Building 1015 Catering Dining Reception Center	1,000
106.	815-1017-001	Physical Fitness Center Washing Machines	400
107.	800-2080-001	McDonald's Food Preparation Grease Trap	2,400
108.	90-OW1-001	Bilge water Treatment System 001 (SW of Dry Dock 1)	<b>60,000</b>
109.	90-OW2-001	Bilge water Treatment System 002 (SW of Dry Dock 2)	<b>60,000</b>
110.	90-OW3-001	Bilge water Treatment System 003 (SE of Dry Dock 5)	<b>60,000</b>
111.	90-OW4-001	Bilge water Treatment System 004 (S of Building 431)	<b>60,000</b>
112.	90-OW5-001	Bilge water Treatment System 005 (SW of Dry Dock 6)	<b>86,400</b>
113.	90-DD1-002	Dry Dock Process Water Collection System at Dry Dock 1	N/A
114.	90-DD2-002	Dry Dock Process Water Collection System at Dry Dock 2	N/A
115.	90-DD3-002	Dry Dock Process Water Collection System at Dry Dock 3	N/A
116.	90-DD4-002	Dry Dock Process Water Collection System at Dry Dock 4	N/A
117.	90-DD5-002	Dry Dock Process Water Collection System at Dry Dock 5	N/A
118.	90-DD6-002	Dry Dock Process Water Collection System at Dry Dock 6	N/A
119.	90-DD16-002	Combined Dry Dock Process Water Collection Systems for Dry Docks 1 through 6	<b>260,000</b>
120.	71-DD1-005	Dry Dock 1-Ship Hydro-blasting/Pressure Washing Water & Related Stormwater	N/A
121.	71-DD2-005	Dry Dock 2-Ship Hydro-blasting/Pressure Washing Water & Related Stormwater	N/A
122.	71-DD3-005	Dry Dock 3-Ship Hydro-blasting/Pressure Washing Water & Related Stormwater	N/A
123.	71-DD4-005	Dry Dock 4-Ship Hydro-blasting/Pressure Washing Water & Related Stormwater	N/A
124.	71-DD5-005	Dry Dock 5-Ship Hydro-blasting/Pressure Washing Water & Related Stormwater	N/A
125.	71-DD6-005	Dry Dock 6-Ship Hydro-blasting/Pressure Washing Water & Related Stormwater	N/A
126.	71-DD7-005	Combined Dry Docks Ship Hydro-blasting/Pressure Washing Water & Related Stormwater	<b>300,000</b>
127.	90-PW2-001	Dry Dock Drainage Sump Pumping Station - Dry Dock 2	5,000
128.	90-PW4-001	Dry Dock Drainage Sump Pumping Station-Dry Dock 4	9,000
129.	90-PW5-001	Dry Dock Drainage Sump Pumping Station-Dry Dock 5	7,200
130.	90-PW6-001	Dry Dock Drainage Sump Pumping Station-Dry Dock 6	25,000
131.	99-DD1-001	Special Hull Treatment Tile Removal Hydro-blast Water at Dry Dock 1	<b>8,000</b>
132.	99-DD2-001	Special Hull Treatment Tile Removal Hydro-blast Water at Dry Dock 2	<b>8,000</b>
133.	99-DD3-001	Special Hull Treatment Tile Removal Hydro-blast Water at Dry Dock 3	<b>8,000</b>
134.	99-DD4-001	Special Hull Treatment Tile Removal Hydro-blast Water at Dry Dock 4	<b>8,000</b>
135.	99-DD5-001	Special Hull Treatment Tile Removal Hydro-blast Water at Dry Dock 5	<b>8,000</b>
136.	99-DD6-001	Special Hull Treatment Tile Removal Hydro-blast Water at Dry Dock 6	<b>8,000</b>

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137.	350-DD3-001	Hull Cutting Wastewater	500
138.	800-Pier D-001	Pier D Laundromat	8,700
139.	CD-IR-001	Construction Dewatering at Installation Restoration Sites	<b>25,000</b>
140.	MWR-Carwash-001	Carwash at MWR	1,500
141.	Lift Station WB3 (West End)	Municipal Lift Station	N/A
142.	First Street Lift Station (East End)	Municipal Lift Station	N/A

**BRIEF DESCRIPTION OF CITY OF BREMERTON WASTEWATER TREATMENT PLANT**

The City of Bremerton Wastewater Treatment Plant uses a bio-tower and activated sludge process.

Solids received from primary clarifiers are degrittied in cyclone degritters and then thickened in a gravity thickener. The secondary sludge is thickened in a dissolved air flotation thickener (DAFT). The thickened primary and secondary sludges are digested in two anaerobic digesters operated as primary digesters.

The biosolids (digested sludge) is utilized at a city owned forest application site. The recycle streams which include gravity thickener supernatant, DAFT underflow, and digester supernatant are returned to the headworks for further treatment.

Treated, chlorinated (followed by dechlorination) effluent is discharged to Sinclair Inlet, an arm of Puget Sound. The effluent is discharged through a thirty-six inch diameter outfall pipe which extends 450 feet offshore and terminates with a 120-foot long diffuser. The 570-foot long outfall discharges into Sinclair Inlet at a location west of Puget Sound Naval Shipyard.

The approved design criteria for the facility are:

Average flow for the maximum months:	10.1 mgd
Influent BOD <sub>5</sub> loading for the maximum month:	18,100 lbs./day
Influent TSS loading for the maximum month:	22,600 lbs./day

Effluent limitations for metals include:

Mercury: monthly average 1.27 ug/L

The dilution ratio used in the chronic mixing zone was 62:1.

The dilution zone used in the acute mixing zone was 31:1 for ammonia, cadmium, chromium, cyanide, mercury, nickel, and selenium.

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The most recent Class II sampling inspection of the Bremerton POTW occurred June 21-22, 1999. At that time, the plant was found to be performing well with respect to the conventional parameters of BOD<sub>5</sub>, TSS, fecal coliform, pH, and total residual chlorine. Of the six priority pollutants detected in the sample collected during the inspection, only copper exceeded acute and chronic water quality criteria. However, there was no reasonable potential for copper to violate water quality standards in the receiving water, when dilution factors are considered. The dilution factors established for the City of Bremerton POTW are 25:1 for acute applications and 69:1 for chronic applications.

In addition, samples collected of PSNS wastewater indicated twenty-two volatile and fourteen semi-volatile organic compounds to be present at detectable concentrations. Of those associated with water quality criteria, all concentrations were either close to or below criteria. Eight priority pollutant metals were found in samples of PSNS wastewater. Copper was found in the highest concentration, at 365 micrograms per liter at the WB-3 monitoring vault. Samples collected during the Class II inspection indicated eight priority pollutant metals to be present at detectable concentrations in the sludge. All metals in the sludge sample were present at concentrations well below EPA Sludge Application Limits and EPA Ceiling Concentrations.

The sludge, which is anaerobically digested at the Bremerton plant, is utilized on permitted forest lands owned by the City.

#### DESCRIPTION OF TREATMENT TECHNOLOGY USED IN BUILDING 871

##### Industrial Wastewater Treatment Plant Building (910-871-001)

Approximately ninety percent of wastewater treated at the Industrial Wastewater Treatment Plant (Building 871) originates in the Plating Shop (Building 873). Metal finishing wastewater enters Building 871 through hardpiping from Building 873. Many other types of wastes are hauled to the waste storage tanks from areas described below. These miscellaneous wastes are sampled or characterized based on knowledge of their origin prior to arrival at Building 871 and are classified as chrome bearing waste, metal-bearing wastewaters containing other-than-chrome waste, or cyanide waste.

Chromium wastewater is stored in three-each 30,000 gallon holding tanks. The first step in treatment of chromium containing wastes is reduction to trivalent chromium by means of addition of sodium sulfite. Chromium-bearing wastewater is treated in a 30,000 gallon tank.

Cyanide-bearing wastewater is stored in a 30,000-gallon cyanide holding tank or a 10,000 gallon holding tank. The contents of a cyanide tank are treated when one of the tanks reaches approximately 90% of its capacity. Typically, either one 30,000 gallon batch or three 10,000 gallon batches of cyanide bearing wastewater are treated during each six-month period. The treatment of cyanide-bearing wastewater includes alkaline chlorination followed by flocculation and settling.

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In addition to the miscellaneous wastewater hard-piped from the plating shop, a smaller portion of miscellaneous wastewater is received in 3,000-gallon hazardous waste tanks, although some wastewater is also received in 55-gallon drums and smaller containers. This wastewater is stored in the 30,000-gallon miscellaneous waste tank, unless it is classified as cyanide waste or chromium waste. Examples of miscellaneous waste include acid from the battery shop (Building 978), water containing lead from Building 460 (generated when the jet cutter is used on lead) and photo-etch waste (fish glue waste).

All wastes received as miscellaneous wastes are wastes which the shipyard has determined to have a substantial probability of containing significant concentrations of toxic metals. A review of analytical data tended to substantiate this, in that virtually all classified wastes contained at least two milligrams per liter of toxic metals, most commonly copper and zinc as well as significant concentrations of lead. In addition, some of the portable tank wastes are designated chromium or cyanide wastes, and are directed to the appropriate chromium or cyanide waste storage tanks.

Miscellaneous wastes transported to Building 871 in 3,000-gallon tanks are transferred to a 30,000-gallon tank using a hose which is hooked up to a pipe coming through the treatment plant wall.

The pH of the 30,000-gallon tank is maintained at approximately 3.5 in order to keep the metals in solution until treatment. The contents of the tank are typically treated when the tank reaches eighty to ninety percent of capacity. The tank is treated approximately once per week.

The treatment method employed for the miscellaneous waste holding tank involves modification of the pH to between 8.0 and 8.5, and addition of polymer as the waste is conveyed to the primary clarifier. Polymer is also added to the secondary clarifier as necessary. The sludge drawn off from these clarifiers is stored in an underground sludge tank and is thickened in a sludge thickener and conveyed to a sludge drier and press which discharges the sludge as pellets into fifty-five-gallon drums.

The sludge is then hauled to an off-site TSD facility. Sludge is approximately 25% solids prior to drying and approximately 50% solids after drying.

The overflow from the secondary clarifier is conveyed to six sandfilters which are backflushed, as necessary, based on a set maximum pressure differential across the filters. After treatment in the sandfilters, the treated wastewater is conducted to either the west compartment of the treated effluent holding tank (42,000 gallon capacity) or the east compartment (91,000 gallon capacity) of the same tank. However, the volume of the typical treated effluent batch is approximately 25,000 gallons. The total annual discharge to the sanitary sewer is approximately 450,000 gallons. The treated wastewater is tested for heavy metals prior to discharge. Should the treated wastewater fail to meet these limitations, it is retreated until it does meet these criteria.

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*PERMIT STATUS*

The previous permit for this facility was issued on June 18, 1996. The permit expired on June 18, 2001.

An application for permit renewal was submitted to the Department on April 11, 2001, and accepted by the Department in April 16, 2001. A Notice of Temporary State Waste Discharge Permit was issued to the shipyard on June 22, 2001. The letter states that, by virtue of the application and the passage of sixty (60) days following application, the shipyard was deemed to have a temporary permit effective June 15, 2001.

*SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT*

The most significant compliance-related incidents consist of intermittent exceedances of the flow limitations at the Oily Water Treatment Systems at sample points 3, 5, and 6 using the numbering system in the permit issued in 1996. The flow limitation of 43,200 gpd was exceeded fifteen times in calendar years 1999-2000. The maximum of the flow exceedances consisted of a maximum daily discharge of 59,200 gallons per day in May 1998. However, the shipyard sent a letter to WDOE on September 19, 1996, requesting an increase in the flow limitation to 60,000 gallons per day. The Department failed to act on this request within sixty (60) days.

A similar exceedance of flow limitations occurred at Sample Points 177 and 178 (Hydro-blast Pressure Wash Water for Dry Docks 006 and 007). The flow limitations are 30,000 gpd in the existing permit. Sixteen exceedances of this limitation occurred in calendar years 1998 through 2000, with flows as high as 158,700. The shipyard had also requested an increase in the limitation to 250,000 gallons per day at these sample points in their permit modification request of 1996.

Two flow exceedances occurred at Sample Point 183 (Dry Dock 004 Stormwater Collection System). The highest of these exceedances involved a discharge of 49,400 gallons per day, which occurred in November 2000.

One flow limitation exceedance occurred at Sample Point 184 (Dry Dock 005 - Stormwater Collection System), consisting of a discharge of 46,700 gallons per day in November 2000.

The limitation on flow at sample point 182 is 42,000 gpd. Two flow exceedances occurred at this sample point, the highest being 85,000 gallons per day, which occurred in January 1999.

Zinc was measured at 7.46 mg/L daily maximum at Sample Point 180 (Dry Dock 1 – Stormwater Collection System) in December 2000.

Zinc was measured at a concentration of 7.44 mg/L at Sample Point 182 (Dry Dock 3 – Stormwater Collection System) in August 1999.

Zinc was measured at a daily maximum concentration of 5.32 mg/L at Sample Point 184 (Dry Dock 5 – Stormwater Collection System) on August 1, 2000.

In addition, the shipyard reported a number of spills in which some contaminated wastewater reached the sanitary sewer.

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*SEPA COMPLIANCE*

As the significant industrial discharges contemplated for inclusion in the proposed permit are pre-existing and already covered in the existing permit, there is no requirement for the Permittee to complete an environmental checklist. It is believed that the additional minor industrial/commercial discharges newly authorized by the proposed permit (e.g., restaurant grease trap discharges and bachelors' enlisted quarters laundry facility wastewater) do not trigger the requirement for completion of an environmental checklist under the State Environmental Policy Act.

**PROPOSED PERMIT LIMITATIONS**

State regulations require that limitations set forth in a waste discharge permit must be based on the technology available to treat the pollutants (technology-based) or be based on the effects of the pollutants on the POTW (local limits). Wastewater must be treated using all known, available, and reasonable technology (AKART) and not interfere with the operation of the POTW.

The more stringent of the local limits-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

*TECHNOLOGY-BASED EFFLUENT LIMITATIONS*

All waste discharge permits issued by the Department must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). Existing federal categorical limitations for the metal finishing-related discharges for this facility are found under 40 CFR Part 433. The Department considers fulfillment of the applicable categorical regulations to be consistent with the State of Washington's requirement that the conditions of discharge be consistent with AKART.

*EFFLUENT LIMITATIONS BASED ON LOCAL LIMITS*

In order to protect the City of Bremerton POTW from pass-through, interference, concentrations of toxic chemicals that would impair beneficial or designated uses of sludge or potentially hazardous exposure levels, limitations for certain parameters are necessary. These limitations are based on local limits established by the Department. As the changes in flows and natures of operations have not been significantly affected since the time the previous permit was issued, the local limits calculated for the permit issued in 1996 will be used in the proposed permit.

**CALCULATION OF LOCAL DISCHARGE LIMITATIONS**

Discharge limitations were calculated using data specific to local conditions. The following criteria were used to determine local discharge limitations:

1. Protection of Sludge Quality
2. Protection of Water Quality
3. Protection of Anaerobic Digestion and Activated Sludge Processes  
Against Interference

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Data used in developing the local limitations:

1. The flow for the Bremerton POTW was taken as 7.6 MGD. The chronic dilution factor of 62 was used to develop a receiving stream flow for the model of 471.2 mgd. The chronic dilution factor of 62 was used to develop the limitations for the City of Bremerton POTW as described in the fact sheet for that permit. A receiving stream flow was needed for the model even though the discharge is to Sinclair Inlet as opposed to a stream.
2. The industrial flow was taken as 50,000 gpd from the main pretreatment building (Building 871) and 90,000 gpd from the other metal bearing sources, mainly the bilge water oil/water separators.
3. The water quality criteria used were based on chronic criteria appearing in WAC 173-201A:

arsenic	0.036 mg/L
cadmium	0.008 mg/L
chromium	0.05 mg/L
copper	0.0025 mg/L
cyanide	0.001 mg/L
lead	0.0058 mg/L
mercury	0.00025 mg/L
nickel	0.0079 mg/L
selenium	0.071 mg/L
silver	0.0012 mg/L
zinc	0.0766 mg/L

The following removal efficiencies were used. Influent/effluent data supplied by the City of Bremerton was used in all cases in which data was adequate.

- Arsenic: Bremerton did not have influent/effluent data on arsenic. Therefore, the median removal rate of 45% was taken from Table 3-10 in the USEPA Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program.
- Cadmium: The cadmium values measured by the City of Bremerton were generally not detected in the influent and effluent. Therefore, no removal rates could be calculated using the data. Therefore, the removal rate of 67% was taken from the above reference.
- Chromium: The chromium removal rate of 59% was calculated using influent/effluent data supplied by the City of Bremerton.
- Copper: The copper removal rate of 89% was calculated using influent/effluent data supplied by the City of Bremerton.

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- Cyanide: The City of Bremerton does not have cyanide influent/effluent data. Therefore, the removal rate of 69% was taken from the above USEPA reference.
- Lead: Lead was generally not detected in the influent and effluent samples collected by the City of Bremerton. Therefore, the removal rate of 61% was taken from the above-cited USEPA reference.
- Mercury: Mercury was not detected often in the influent and effluent. Therefore, it was decided not to use the City of Bremerton data to calculate the removal rate. Therefore, the removal rate of 60% was taken from the above-cited USEPA reference.
- Nickel: Absence of detected values in City of Bremerton influent/effluent data made it necessary to use the removal rate of 42% from the above-referenced USEPA document.
- Selenium: The City of Bremerton did not have any selenium influent/effluent data. Therefore, the removal rate of 50% was taken from the above-referenced USEPA document.
- Silver: The City of Bremerton did not have any silver influent/effluent data. Therefore, the median removal value of 75% was taken from the above-referenced USEPA document.
- Zinc: The zinc removal rate of 85% was calculated using influent/effluent data supplied by the City of Bremerton.

The following secondary treatment inhibition threshold levels were used. The inhibition levels were obtained from Table 3-2 in the above-referenced USEPA document and are rough midpoints of the ranges of values reported:

arsenic	0.1 mg/L
cadmium	5 mg/L
chromium	10 mg/L
copper	1 mg/L
cyanide	2.5 mg/L
lead	2.5 mg/L
mercury	0.5 mg/L
nickel	2.5 mg/L
selenium	not enough data available
silver	2.5 mg/L
zinc	5 mg/L

The following anaerobic digestion inhibition threshold levels were used. The values used were taken from the rough midpoints of the inhibition threshold values reported in Table 3-5 in the above-referenced USEPA document:

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arsenic	1.6 mg/L
cadmium	20 mg/L
chromium	120 mg/L
copper	40 mg/L
cyanide	4 mg/L
lead	340 mg/L
mercury	13 mg/L
nickel	10 mg/L
selenium	not enough data available
silver	not enough data available
zinc	400 mg/L

Sludge flow to the digester used was 21,000 gpd (0.021 mgd).

There was no data available on pollutant assays in the sludge flow to the digester. Therefore, the assumption was made that these values were zero. This assumption is of significance only in the case of calculating the limitation for cyanide. The lack of a value for sludge flow to the digester, therefore, made it necessary to use the formula for conservative pollutants to calculate the digester inhibition limited headworks loading for cyanide.

The following sludge disposal criteria were taken from Table 3 of the federal "503 Regulations" (40 CFR Part 503.13), which are criteria used for bulk application to agricultural land, forest, public contact site, reclamation site, lawn, or home garden:

arsenic	41 mg/dry kg
cadmium	39 mg/dry kg
chromium	1200 mg/dry kg
copper	1500 mg/dry kg
cyanide	no criterion
lead	300 mg/dry kg
mercury	17 mg/dry kg
nickel	420 mg/dry kg
selenium	36 mg/dry kg
silver	no criterion
zinc	2800 mg/dry kg

The flow from the PSNS batch discharge was assumed to be 50,000 gallons per day. Actual batch treatment levels were formerly as high as 150,000 gallons per batch. Due to wastewater reduction practices undertaken at the plating shop during the last five years, Building 871 currently discharges batches of approximately 25,000 gallons once every two weeks. As discharges are not made every day, the use of the above flows acts as a conservative assumption in the case of sludge quality.

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The direct discharge to the sanitary sewer from other points which are likely to contain significant amounts of metals is expected to be highly variable due to the intermittent nature of many of the discharges. Direct industrial flows to the sewer which are likely to contain metals were taken to be 90,000 gallons per day. The greater portion of this flow consists of bilge water treatment. Data available from bilge water treatment indicates that metal values are quite low after treatment. Thus, the inclusion of bilge water flows is a conservative assumption. Actual flows are expected to be less than 50,000 gallons per day for the next several years. For the last several years the measured average combined flow from all five bilgewater treatment systems has been 34,200 gallons per day.

The production of sludge at Bremerton POTW was taken as 16,200 gallons per day at a solids concentration of 2.9 percent. This is based on data supplied by the City of Bremerton.

The background concentrations of metals in the receiving water were taken to be zero as they are realistically expected to be much smaller than the concentrations found in POTW effluent.

**WATER QUALITY CRITERIA USED A BASIS FOR DETERMINATION OF LOCAL LIMITATION**

All of the equations stated below are taken from the *Guidance Manual on the Development and Implementation of Local Discharge Limitations under the Pretreatment Program (USEPA, 1987)*. The copper and mercury limitations in the previous City of Bremerton NPDES permit were employed with the following equations to develop a maximum headworks loading based on water quality criteria.

$$L_{in} = 8.34 * C_{crit} * Q_{potw} / (1 - R_{potw})$$

where:  $L_{in}$  = allowable influent loading (lbs./day)  
 $C_{crit}$  = NPDES permit limit (mg/L)  
 $Q_{potw}$  = POTW flow, mgd  
 $R_{potw}$  = removal efficiency across POTW (decimal)

Marine water quality criteria were used for those parameters other than copper and mercury. The equation used to calculate the maximum headworks loading was:

$$L_{in} = 8.34 (C_{crit} (Q_{str} + Q_{potw}) - (C_{str} * Q_{str}) / (1 - R_{potw}))$$

where:  $Q_{str}$  = flow of receiving water (or equivalent for marine)  
 $C_{str}$  = pollutant concentration in receiving waters

**ACTIVATED SLUDGE INHIBITION CRITERIA USED AS A BASIS FOR DETERMINATION OF LOCAL LIMITATION**

$$L_{in} = 8.34 * C_{crit} * Q_{potw} / (1 - R_{prim})$$

where:  $L_{in}$  = allowable headworks loading (pounds per day)  
 $C_{crit}$  = threshold inhibition level (mg/L)  
 $Q_{potw}$  = POTW flow, mgd  
 $R_{prim}$  = removal efficiency across primary treatment (decimal)  
 $R_{sec}$  = removal efficiency across combined primary & secondary (decimal)

**SLUDGE DIGESTION INHIBITION USED AS A BASIS FOR  
DETERMINATION OF LOCAL LIMITATION**

$$L_{in} = 8.34 * C_{crit} * Q_{dig} / R_{potw}$$

where:  $L_{in}$  = allowable headworks loading (pounds per day)

$C_{crit}$  = threshold digestion inhibition level (mg/L)

$Q_{dig}$  = sludge flow to digester

$R_{potw}$  = removal efficiency across POTW (decimal)

**SLUDGE DISPOSAL CRITERIA USED AS A BASIS FOR DETERMINATION  
OF LOCAL LIMITATIONS**

$$L_{in} = 8.34 * C_{slcrit} (PS/100) * Q_{sldg} / R_{potw}$$

where:  $L_{in}$  = allowable influent loading (lbs./day)

$C_{slcrit}$  = sludge disposal criterion (mg/L dry sludge)

PS = percent solids of sludge to disposal

$Q_{sldg}$  = flow of sludge to disposal (mgd)

$R_{potw}$  = removal efficiency across POTW (decimal)

**METHOD OF CALCULATING LOCAL LIMITS FROM ALLOWABLE  
HEADWORKS LOADING**

The allowable headworks loading based on each of the above criteria was calculated for each of the metals using the above equations. The smallest allowable headworks loading (critical headworks loading) was used to calculate the local limit. The number of pounds contributed by non-industrial uses was subtracted from the number of pounds per day represented by the critical headworks loading. The resulting number of pounds of capacity available for industrial discharge is then divided by the industrial flow to yield a concentration.

**RESULTS OF LOCAL LIMITS CALCULATION**

- Arsenic: The local limit 0.23 mg/L for arsenic was based on sludge quality criteria.
- Cadmium: The cadmium limitation of 0.17 mg/L was based on sludge quality criteria.
- Chromium: The local limit for chromium was calculated as 6.5 mg/L based on sludge quality. A limitation of 5.0 mg/L was adopted as this is the TCLP limitation for hazardous waste in WAC 173-303.
- Copper: The copper limitation of 5.2 mg/L is based on sludge quality criteria.
- Cyanide: The cyanide limitation of 0.57 mg/L is based on anaerobic digester inhibition. There is no sludge criterion for cyanide.
- Lead: The lead limitation of 1.3 mg/L is based on sludge quality.
- Mercury: The mercury limitation of 0.10 mg/L is based on sludge quality criteria.

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- Nickel: The nickel limitation of 3.2 mg/L is based on sludge quality criteria.
- Selenium: The selenium limitation is based on anaerobic digester inhibition, but is not important in this permit, as the shipyard does not discharge selenium in environmentally significant quantities.
- Silver: The silver limitation calculated to be 16.4 mg/L, based on water quality criteria. The actual limit used in this permit is 2.0 mg/L and is based on AKART for photo-finishing.
- As noted, the silver limitation of 2 milligrams per liter is based on AKART and is applied to all photo-processing shops by the Department.
- Zinc: The zinc limitation was calculated to be 9.8 mg/L as limited by sludge quality. The actual value of the zinc limitation used in the permit is 5.0 as this AKART limitation is more stringent than the calculated value.

**DETERMINATION OF POLLUTANTS OF CONCERN AT BUILDING 871**

Approximately ninety percent of the industrial wastewater entering Building 871 comes from metal finishing processes, mainly from building 873. Wastewaters generated in Building 873 are comprised of three discrete waste streams:

- Hexavalent chromium contaminated wastewaters
- Rinse waters associated with cyanide-using processes
- Miscellaneous acid and alkaline rinse waters

The above wastewaters are kept separately in the shop and directed to three retention tanks. The pumps in each of the retention tanks are level-activated and direct the wastewater to Building 871 by means of PVC pipelines.

In addition, wastewaters generated in the Sheet Metal Shop (Building 857) are brought to the IWPF by means of portable tanks loaded on trucks. The wastewaters generated in this building include acidic and alkaline aluminum cleaning solutions, as well as small quantities of miscellaneous wastes containing metals, and photo-etch solutions containing chromates.

Wastewaters originating in the Pipe Shop and the Boiler Shop (Building 107) include metal-bearing wastewaters from brazing processes and a wave guide brazing process. They are brought to the IWPF by means of tanker trucks or portable tanks.

Wastewater generated from plasma-arc cutting processes in Building 460 are also brought to the IWPF in portable tanks.

Sulfuric acid and solutions containing lead are generated from draining various types of batteries in Building 978 (the Battery Shop). An 11,500-gallon underground accumulation tank is used to collect this wastewater. At times this wastewater is hauled to Building 871 in portable tanks. Alternatively, this wastewater may be hauled off-site for final disposal by a contractor.

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Applicable metal finishing standards appear in 40 CFR Part 433.15 Pretreatment Standards for existing sources. The shipyard does not qualify for the job shop exemption as it owns the material being processed. In addition, the shipyard does not qualify for the printed circuit board manufacturer exemption from the Part 433 regulations.

The limitations appearing in 40 CFR Part 433.15 (Pretreatment Standards for Existing Sources) are:

	Maximum for any one day (mg/L)	Monthly Average (mg/L)
Arsenic (T)	N/A	N/A
Cadmium (T)	0.69	0.26
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO	2.13	N/A
Mercury	N/A	N/A

Cadmium has recently (1999) been present at concentrations of 0.15 mg/L. As the monthly average effluent limitation is 0.26 mg/L, this metal has been determined to be a pollutant of concern. The sampling frequency is once per batch.

Chromium is usually not detected at the detection limit of 0.1 mg/L, although it has occasionally been present in treated effluent. However, chromium is present in considerable concentrations in the raw wastewater. In fact, the waste handling segregation procedures are in large part developed with the purpose of efficiently removing chromium. Therefore, chromium has been determined to be a pollutant of concern. The sampling frequency is once per batch.

Copper is present in considerable concentrations in plant influent and is usually detected in the effluent at a concentration of between 0.1 and 0.2 mg/L. In 1999, the highest observed concentration was 0.29 mg/L. Therefore, copper has been determined to be a pollutant of concern.

Lead is generally not detected in effluent at the 0.1 mg/L detection limit normally employed by PSNS. Sources of lead may include the battery shop, cleaning of soldered pipes and circuitry, and electrodes in the metal plating shop. Therefore, lead has been determined to be a pollutant of concern.

Nickel is commonly present in effluent at concentrations between <0.1 mg/L and 0.5 mg/L. The main source of nickel is probably the plating shop and grinding of stainless steel and cupronickel plating. Therefore, nickel has been determined to be a pollutant of concern.

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Silver is generally not detected at the 0.1 mg/L detection limit. Some silver is expected from the plating shop. However, most of the silver is used on the base for photographic purposes. The photographic silver-bearing wastewater (mainly fixer) is usually disposed of to the sanitary sewer after being run through a silver removal process nearby the photographic developer. A well-maintained silver recovery unit can be expected to reduce effluent concentrations of silver in fixer effluent to less than 2 mg/L. Silver is a pollutant of concern, mainly in the photo pressing wastewater.

Zinc is typically present in effluent at concentrations between <0.1 and 0.5 mg/L. The source of most zinc is expected to be the plating shop, as well as the corrosion of water supply pipes, and zinc naturally occurring in the water supply. As the zinc concentrations in the effluent are a substantial proportion of the limitation, zinc has been determined to be a pollutant of concern.

Monitoring for tin is required to enable the Department to evaluate whether tin becomes present at environmentally significant concentrations. Plating processes and bottom paint are potential sources of tin.

TTO's (Total Toxic Organics) are occasionally detected at the 0.01 mg/L concentration in the effluent. This is well below the federal categorical limitation of 2.13 mg/L. The Navy has essentially eliminated the use of organic solvents in degreasing. Concentrations of TTO's are not expected to approach the limit if the Navy continues to follow good management practices and continues to minimize the use of TTO's in degreasing. The main use of TTO monitoring is to monitor whether the Navy is successful in its efforts to keep TTO discharges to a minimum.

The lower pH limitation of 6.0 was requested by the City of Bremerton. The upper pH limitation of 11.0 is based on the limitation appearing in WAC 173-216-060. The untreated influent is generally acidic. The pH is typically raised in the treatment process to well above the limitation to promote settling. Therefore, there is a potential to violate the pH limitations unless pH is specifically adjusted prior to discharge. Discharge pH levels have been in the range of 8.0 to 8.7.

Cyanide must be measured at the discharge of the cyanide treatment process prior to mixture with non-cyanide bearing wastewaters. Cyanide bearing streams are associated with cadmium, copper, and many zinc plating solutions in the plating process. Cyanide not amenable to chlorination is also often associated with chromium conversion coating (aka alodining processes). Cyanide has been detected at concentrations as high as 0.1 mg/L in treated effluent from cyanide bearing processes.

Discharges from Building 871 are made on a batch basis. Due to the considerable volume of each batch, samples are required for each batch for most parameters. Parameters which must be monitored at this point include flow, cadmium, chromium, copper, lead, nickel, silver, zinc, mercury, and TTO. Tin is required to be monitored on a quarterly basis, although no limitation has been established for tin. The tin monitoring is required to determine if tin is being discharged in such quantities as to require establishment of a tin limitation.

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The Navy is currently in the design phase of a new treatment plant to replace that in Building 871. The batch treatment volumes employed at the new treatment plant may be less than 10,000 gallons per day. If the Navy requests reopening of the permit at the time the new treatment plant is completed, the Department may consider a modification of the permit to employ a new monitoring schedule.

The location for cyanide sampling is at the discharge of the cyanide treatment system and is required to be on a quarterly basis. The reason for sampling for cyanide at this point is due to the requirements appearing in 40 CFR, Part 433, and the fact that USEPA developed technology-based cyanide limitations based on concentrations prior to dilution by non-cyanide bearing process waters.

The quality of wastewater discharged from Building 871 to the sanitary sewer during 1999 is shown in the table below.

<b>Characteristics of Treated Effluent Discharged from Building 871 to the Sanitary Sewer for Calendar Year 1999 (daily maxima)</b>			
<b>Pollutant Parameter</b>	<b>Minimum</b>	<b>Mean</b>	<b>Maximum</b>
Cadmium, T, mg/L	<0.05	0.068	0.115
Chromium, T, mg/L	<0.1	0.159	0.52
Copper, T, mg/L	0.10	0.19	0.29
Lead, T, mg/L	<0.2	<0.2	<0.2
Nickel, T, mg/L	<0.1	0.225	0.54
Zinc, T, mg/L	<0.1	0.141	0.34
Mercury, T, mg/L	<0.05	<0.05	<0.05

#### **BASIS FOR DISCHARGE LIMITATIONS FOR BUILDING 871**

The flow limitation for Building 871 is 82,000 gallons per day as this is the maximum that the plant is equipped to discharge, although the effluent tank capacity is 150,000 gallons.

Metals limitations were taken as the most stringent of the calculated local limitation; the categorical limitation for Metal Finishing under 40 CFR, Part 433.15, and the limitations requested by the City of Bremerton.

The cadmium limitation of 0.17 is based on the local limits calculation for the monthly average. The local limitation was more stringent than the categorical limitation appearing in 40 CFR, Part 433.15. However, the monthly average categorical limitation was applied as the monthly average limitation. As a result, the monthly average limitation used in the permit is higher than the daily maximum limitation used in the permit.

The chromium limitation is 2.77 mg/L for the daily maximum and 1.71 mg/L for the monthly average. Both limitations are based on the daily categorical limitations appearing in 40 CFR, Part 433.15.

The copper limitation is 3.38 mg/L for the daily maximum and 2.07 mg/L for the monthly average. Both limitations are based on categorical limitations appearing in 40 CFR, Part 433.15.

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The lead limitation is 0.69 mg/L for the daily maximum and 0.43 mg/L for the monthly average. Both of the limitations are based on the categorical limitations appearing in 40 CFR, Part 433.15.

The daily maximum limitation for nickel of 3.2 mg/L is based on the calculated local limit. The monthly average limitation for nickel is 2.38 mg/L based on the categorical limitation appearing in 40 CFR, Part 433.15.

The daily maximum limitation for silver is 0.43 mg/L, and the monthly average limitation is 0.24 mg/L. Both limitations are based on the categorical limitations appearing in 40 CFR, Part 433.15.

The daily maximum limitation for zinc is 2.61 mg/L, and the monthly average is 1.48 mg/L. Both limitations are based on the categorical limitations appearing in 40 CFR, Part 433.15.

The daily maximum limitation for mercury is 0.10 mg/L. The limitation is based on the local limits calculation.

The calculated total cyanide daily maximum limitation of 1.20 mg/L and monthly average of 0.65 mg/L are based on the categorical limitations appearing in 40 CFR, Part 433.15, calculation. These cyanide limitations are applicable to the cyanide bearing streams only, prior to mixture with any non-cyanide bearing streams.

The local limit for cyanide was calculated as 0.57 mg/L and is applied to the final discharge as 0.60 mg/L. Cyanide sampling is required for the batch discharge to comply with the local limit of 0.6 mg/L. The limitation at the cyanide-only stream is 1.2 mg for the daily maximum and 0.65 mg/L for the monthly average.

The daily maximum limit for TTO is 2.13 mg/L and is based on the categorical limitation appearing in 40 CFR, Part 433.15. There is no monthly average limitation for TTO in the federal regulations. Therefore, none have been included in this permit. Submittal of a TTO certification statement in lieu of testing is authorized.

The PCB limitation was calculated to result in concentrations below the detectable level in municipal sludge. Dielectric oils and pipe lagging material are potential sources of PCB's.

#### **SOURCES OF WASTEWATER DISCHARGED TO BUILDING 871**

The following processes generate wastewater which is discharged to the main industrial pretreatment facility in Building 871:

##### **Building 873 - Metal Preparation Building**

The Metal Preparation Building is the source of approximately 90 percent of the wastewater treated in Building 871. Wastewater generated in this building is segregated into three separate sumps:

1. hexavalent chromium bearing wastewaters
2. cyanide bearing wastewaters
3. other acid and alkaline rinse waters

The above three wastewater types are directed in separate dedicated pipelines to the main pretreatment building (Building 871).

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Building 857 - Sheet Metal Shop

Acidic and alkaline wastewaters originating from aluminum cleaning in this building are transported by means of tanker truck to the miscellaneous waste tank in Building 871. In addition, tumbler water and photo-etch solutions are also taken to Building 871 for treatment.

Building 107 - Pipe Shop

Metal working wastewaters from the Pipe Shop are trucked to Building 871 for treatment. These wastewaters include rinse water from the brazing work area, the brazing training area, and the wave guide aluminum brazing area. The main metals used in these processes are copper-nickel, nickel-copper, bronze, and aluminum. Two tanks of approximately 60 gallons each are used in the wave guide brazing process and are routinely emptied and trucked to the Building 871 miscellaneous tank. One tank contains Oakite LNC, and the other tank, Oakite 160.

Building 460 – Metal Cutting Operation

Metal-bearing wastewaters from this building are hauled to Building 871 in portable tanks.

Building 431 - Machine Shop

Wastewaters generated in the machine shop are transported by portable tanks and transferred into the appropriate tanks in the lower level of Building 871. A circuit board shop is also located within this building. The water jet cutter is the source of lead bearing water from this building.

Building 978 - Battery Shop

Sulfuric acid wastewaters, which may also bear significant concentrations of lead and cadmium, are the main wastewaters generated in this building. These wastewaters are stored in a 10,000-gallon underground storage tank beneath the battery shop. This wastewater is sometimes hauled to Building 871 in portable tanks and sometimes hauled off-site for disposal as hazardous waste by a contractor.

Building 944 - Hazardous Waste Storage Container Area

Wastewaters stored at this building are first tested in order to determine the legally and technically appropriate disposal methods. Wastes which are found to be treatable using the treatment methods used in Building 871 are shipped by portable tank to the appropriate waste storage tank in that building.

Shipboard Wastes

Chromate corrosion inhibitors, cleaning solutions, and corrosive wastes containing metals are the main types of wastes generated from ships. These wastes are transported to Building 871 by portable tank.

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Miscellaneous Wastes

Other types of wastes transported to Building 871 include:

- Piping system flushing wastewaters from flushes hauled from piers or dry dock areas.
- Shelf-life expired chemicals which are amenable to treatment in Building 871.

SOURCES OF WASTEWATER NOT DISCHARGED TO BUILDING 871

**BUILDING 58 - MAINTENANCE BUILDING**

Building 58 - Shop 38 - Oxygen System Cleaning With Non-ionic Detergents (38-58-003)

Non-ionic detergents are used to clean parts for oxygen systems. 0.1 ounce of non-ionic detergent is employed per gallon of water. The estimated daily maximum discharge of water from this sink is 200 gallons per day. No monitoring is required due to the low concentration of metals likely to be present in this discharge.

Building 58 - Shop 38 - Oxygen System Cleaning With Non-Organic Cleaner (38-58-004)

Non-organic detergents are used to clean oxygen system parts which have been pre-cleaned in alcohol. NOC Octagon OCC-RTU, a silicated alkaline cleaner (containing 10% sodium silicate) is used for the washing. The parts are then rinsed in deionized water. The discharge from this point consists of a fortnightly batch of 15 gallons per batch. The associated resin bed used for de-ionization of the rinse water is discharged at a rate of 60 gallons per batch once per two weeks. The estimated total daily maximum discharge of water from the combined systems is 100 gallons per day. No monitoring is required due to the low concentration of metals likely to be present in this discharge.

Building 58 - Shop 38 - Oxygen System Cleaning With Non-Organic Cleaner (38-58-005)

Oxygen system piping is flushed with 100% NOC Octagon OCC-RTU, a silicated alkaline cleaner, which contains 10% sodium silicate. The NOC is reused until there are more than 10 ppm of either TSS or Oil & Grease. After flushing with NOC, the piping is subjected to a once-through rinse with deionized water to remove the NOC, until the pH of the water is between 6.0 and 8.0. Deionized water is then recirculated through the piping to remove any remaining particulate material. The piping is connected to the flushing apparatus with hoses. The flushing apparatus consists of an eighty-gallon NOC tank, a one hundred and sixty-gallon deionized water tank, and associated pump, filters, piping, valves, and instruments. The NOC tank and the water tank are discharged approximately one time each month. The estimated maximum daily discharge is 200 gallons per day.

Due to the low likelihood of this wastewater bearing pollutants in concentrations approaching the local limitations, the proposed permit does not contain monitoring requirements for pollutants or flow.

*FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-7374  
PUGET SOUND NAVAL SHIPYARD*

Building 58 - Shop 38 – Oxygen Clean Room Washer (38-58-006)

A washing machine in the Oxygen Clean Room is used for laundering coveralls and rags that are used in the oxygen system cleaning processes. Approximately one load of laundry per week is cleaned. The daily maximum discharge is estimated to be 45 gallons per day.

Due to the nature of the processes employed and the small volume of flow, monitoring for pollutants and flow is not required at this sample point.

**BUILDING 107 - PIPE AND BOILER SHOPS**

Building 107 - Shop 56 – Hydro-testing, Solder Flux Flushes, TSP Flushes - Common Sample Point (56-107-024)

The discharge from this sample point could exhibit a daily maximum of up to 25,000 gallons per day and consists of wastewater from the two following sources:

- The first source consists of up to 21,000 gallons per day from new tank hydro-testing. Up to five batches per year are discharged.
- The second source consists of up to 2,000 gallons per day from the flushing of solder joint flushes.

Due to the nature of the processes employed above, the probability of discharge of metals at concentrations exceeding the local limits is minimal. Therefore, no monitoring is required for the above three sample points located in the pipe fitting shop.

Building 107 - Shop 56 - Pipe Fitting-Common Sample Point for (56-107-008, 020,021,022,025) (Designated as 56-107-026 in Permit)

This pipe fitting shop is engaged in pipe bending and pipe cleaning. In the bending area, bending wax, which is applied to the inside of the pipes, is removed by steam cleaning following bending. The steam/wax condensate is discharged through a screen located in the steam clean tank and is then followed by a duplex strainer located in the discharge pipe. The estimated discharge from this process is 90,000 gallons per year. This discharge is designated as 56-107-020. Oil and grease concentrations at 56-107-020 have been measured at 15 mg/L. The five individual discharge points in the pipe test stand area all discharge to a common sump. The estimated daily maximum discharge from the common sump is approximately 1,500 gallons per day.

Discharge point 56-107-008 is associated with a utility sink located in this building which is used to flush hoses. The maximum daily discharge from this point is estimated to be 60 gallons per day. Discharge point 56-107-020 receives wastewater resulting from the steam cleaning of piping during the bending process. The discharge from this point passes through a seventy-micron bag filter before reaching the common sump. The maximum daily discharge from this point is estimated to be 1,000 gallons per day.

*FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-7374  
PUGET SOUND NAVAL SHIPYARD*

The discharge point designated as 56-107-022 is associated with leak testing of welding hoses. The leak testing is performed in a 250-gallon water tank. The maximum daily discharge from this activity is 250 gallons per day associated with draining this tank.

The discharge designated as 56-107-025 receives the steam condensate from the generation of steam from heating for the Wave Guide process and the Dip Braze Cleaning Process. The daily maximum discharge from these processes is 250 gallons per day.

Due to the nature of the processes employed above, the probability of discharge of metals at concentrations exceeding the local limits is minimal. Therefore, no monitoring is required for the above three sample points located in the pipe fitting shop.

**BUILDING 290 - OFFICES, GYRO SHOP, AND GENERAL WAREHOUSE**

Building 290 - Shop 67 - Electronics Parts Washing Sinks (67-290-001)

Electronics parts-washing occurs in two sinks in Shop 67 in Building 290. The washing utility sink contains So-Sure detergent solution. The rinse utility sink is used to rinse off the washed parts with water. As some parts in the rinse sink are washed in Safety Kleen 140 solvent parts cleaner, the rinse water contains some Safety Kleen 140 drag out as well as the soap and detergent mentioned for the wash sink. The maximum daily flow is estimated to be 50 gpd.

There are no monitoring requirements for this location due to the small volume of this waste stream, and the low likelihood that it would contain environmentally significant concentrations of pollutants of concern.

**BUILDING 371 - METALLURGICAL LABORATORY**

Grinding, hand lapping, Caviclean parts cleaning, and salt spray corrosion testing are the main types of wastewater generated at this building.

Building 371 - Code 134 - Metallurgical Sample Salt Water Bath Vapor Condensation (134-371-004)

The salt bath is used to test metal samples for corrosion, and results in a discharge of up to 20 gallons of salt water per year to the sanitary sewer. The maximum daily flow is 0.2 gpd. This is a batch discharge with two discharges per year.

Due to the nature and small volume of this discharge, there are no monitoring requirements.

**BUILDING 427 - ELECTRICAL SHOP**

Building 427 - Shop 51 - Rotoclone Water from Plastic Cutting (51-427-002)

The rotoclone air cleaner removes plastic chips created by cutting mainly plastic as well as some metal material. The daily maximum flow is estimated to be 300 gpd.

Due to the nature and small volume of this discharge, there are no monitoring requirements.

**BUILDING 431 - MACHINE, DIRECTOR AND CENTRAL TOOL SHOPS**

Building 431 - Shop 06 - Leak Tester Tanks (06-431-004)

The leak tester consists of one-each thirty-gallon tank and one-each sixty-gallon tank used to check gauges and welding hoses for leaks. The daily maximum estimated flow to the sanitary sewer from these tanks is 90 gallons per day for the two tanks together.

Zinc has been assayed at 0.13 mg/L in the effluent. Due to the nature of the process and the small flow there are no sampling requirements for this discharge point.

Building 431 - Shop 06 - Plug and Parts Dishwasher (06-431-007)

Wastewater from this discharge point is associated with the cleaning of stainless steel and monel plugs and nuts and nickel-plated aluminum parts. The discharge includes up to 15 gallons per day of non-contact cooling water associated with the dryer. The total discharge is expected to be no greater than 24 gallons per day.

Due to the nature of the process and the small flow there are no sampling requirements for this discharge point.

Building 431 - Shop 06 - Air Filter Cleaning (06-431-008)

Air filters for machinery air conditioning systems are first sprayed with Formula 409 All Purpose Cleaner and then rinsed with water to remove dirt and dust. This process is performed in a large metal sink. The maximum daily discharge is expected to be 20 gallons per day. Due to the intermittent nature of the flow, its small volume, and the nature of the expected contaminants, no monitoring of pollutants is required at this sample point.

Building 431 - Shop 31 - Ultrasonic Parts Cleaning Tank (31-431-A28-001)

This ultrasonic cleaner tank has a capacity of approximately 30 gallons and is used for the cleaning of parts. ML 100 cleaning solution is used with the water. The total discharge is estimated to be 500 gallons per year to the sanitary sewer. The maximum daily flow is 40 gallons per day.

Oil and grease has been measured at a concentration of 19 mg/L at this discharge.

Due to the small flow and nature of the process, there are no sampling requirements for this sample point.

Building 431 - Shop 31 - Water Jet Cutting (31-431-DOOR1-002)

The water jet cutting machine is used to cut aluminum, rubber, mild steel, cork, fibrous glass, HY80, and stainless steel. The wastewater from this machine is first filtered and then run to a batch tank. After settling in two small settling tanks, it is pumped from a batch tank into the sanitary sewer. The daily maximum discharge is expected to be 1,000 gallons per day. Sampling has indicated concentrations of copper of up to 0.13 mg/L and concentrations of nickel of up to 0.3 mg/L.

Based on the results of past sampling and the nature of the process, sampling is required for chromium, nickel, zinc, and copper.

*FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-7374  
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Building 431 - Shop 31 - Parts Hydro-testing (31-431-MEZ-003)

Two parts hydro-testing stations are associated with this discharge. According to the application, the valves are extremely clean prior to cleaning. Testing water is discharged to a common sump and then discharged to the sewer. The maximum daily flow is estimated to be 120 gpd.

Due to the nature of the process, no monitoring requirements are established for this discharge point.

Building 431 - Shop 31 - Pump/Valve Test Closed Loop (31-431-004)

Three valve testing closed loops are used in this shop. One loop is associated with the oil test stands, and one loop is associated with the water/steam test stands. Maximum daily flow is estimated to be 200 gpd.

Analytical results have indicated the presence of oil and grease at a concentration of 33 mg/L.

Due to the nature of the pollutants and small flow from this sample point, no testing is required.

Building 431 - Shop 31 - Valve Hydro-testing (31-431-006)

Three valve-testing stations are located in this area. The water from each of the stations is discharged to a common sump prior to being discharged to the sanitary sewer. The daily maximum discharge is expected to be 200 gallons per day.

Due to the nature of the pollutants and small flow from this sample point, no testing is required.

Building 431 - Shop 56 - Ion Exchange Regeneration Wastewater, Boiler Blowdown and Steam Condensate (56-431-023)

The ion exchange process is used for boiler feed water preparation. The wastewater from regenerating the ion exchange columns is discharged to the sanitary sewer. This wastewater, which is called neutralization water, contains alkaline and acidic components associated with column regeneration. The regeneration wastewater is neutralized prior to discharge to the sanitary sewer. The neutralization water is collected in a 7,000-gallon neutralization tank which is discharged one time per year.

The remainder of the wastewater discharged at this discharge point consists of boiler blowdown and steam condensate. The estimated daily maximum daily discharge of boiler blowdown and steam condensate is 120 gallons per day.

The maximum daily discharge for all sources at this sample point is estimated to be approximately 7,200 gallons per day.

Due to the nature of the pollutants expected from this sample point, no testing is required.

*FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-7374  
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Building 431 - Shop 67 - Room 407A-Circuit Board Rinses (67-431-407A-002)

Circuit boards are sanded and then rinsed. The rinse water is discharged to the sanitary sewer. The circuit boards are then dipped in Neutra-Clean 7, which contains boric acid, followed by a rinse. This rinse is also discharged to the sanitary sewer. The circuit boards are then subjected to an Electrobrite cc-11a application, which contains potassium carbonate. The rinse from this process is discharged to the sanitary sewer. The circuit boards are then dipped in alkaline resist stripper RS1675, which contains monoethanolamine (30-60%). The rinse from the resist strip operation is discharged to the sanitary sewer. The volume of the daily maximum discharge is expected to be 100 gpd. As this shop is employed in circuit board assembly, as opposed to circuit board fabrication, this discharge is not considered to be subject to categorical pretreatment standards under 40 CFR, Parts 413 or 433. Sampling for lead is required at this sample point. The Navy may decide to truck this wastewater to the main pretreatment system at Building 871.

Building 431 - Shop 67 - Photo Development (67-431-408B-003)

Five photographic darkroom processes contribute to this discharge:

- The first discharge is the Kodalith liquid developer, which contains 10% hydroquinone. This discharge is disposed of as hazardous waste.
- The second discharge consists of the acetic acid stop bath. This discharge is disposed of to the sanitary sewer at a daily maximum flow rate of approximately 1.5 gallons per day.
- The third waste source is an ammonium thiosulfate fixer, which is disposed of as hazardous waste by hauling it off-site.
- The fourth step is rinsing. The film is removed from the fixer bath solution and is rinsed in a container of running water. Water flows into the container and out an overflow. This creates a discharge into the sanitary sewer of up to 600 gallons per day. Film is not developed every day, and the rinse water is only running during film developing. Some drag out from the first three steps will be part of the rinse water.
- A Clayton Photo Wetting Solution bath is the final step. The wetting solution is mixed at a capful-per-gallon of water ratio and placed in a developing tray. This solution is replaced two times per week. The maximum discharge from this process is 1.5 gallons per day.

The daily maximum flow to the sanitary sewer for all of the processes associated with this photo development shop is approximately 625 gallons per day. The discharge from this sample point is subject to a limitation for silver. Sampling for silver is required.

Building 431 - Shop 67 - Electronic Cabinet Wash Down (67-431-414B-004)

An average of 100 gallons per day of San-Del cleaner (consisting of a 1% modified amide) is used to wash down electronic cabinets. Contaminants include San-Del cleaner, dirt, cigarette smoke residue, and general grime. The maximum daily flow is 200 gpd.

Based on the nature of the process, no monitoring requirements have been included in the permit for this discharge point.

*FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-7374  
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Building 431 - Shop 67 - Dishwashers for Circuit Boards (67-431-510-005)

This discharge includes the discharge from two dishwashers used in the cleaning of circuit boards. Each of these dishwashers employs approximately 25 gallons per year of Aquaflex Strip 100 and one half gallon per year of defoamer. The maximum daily flow of wastewater is estimated to be 200 gpd.

Based on the small flow from this process, no monitoring requirements for lead have been included in this permit for this discharge point.

Building 431 - Shop 67 - Gauge Cleaning Sink (67-431-Gauge Room-006)

This discharge originates in a sink on the fifth floor, which is used for the cleaning of gauges. A spray and wipe cleaner is used to clean the gauges. The discharge is estimated to exhibit a daily maximum flow of 40 gpd.

Based on the nature of the process, no monitoring is required at this sampling point.

Building 431 - Shop 67 - Gauge Cleaning Freon Eductor Sump (67-431-Room 526-008)

Gauges are cleaned with either detergent, Freon 113 (Trichlorotrifluoroethane) or Freon 141b (Dichlorofluoro ethane) under a vacuum created by an eductor pump. Measurements have indicated that when Freon 113 is used, its concentration at the time of the measurement was 19.5 mg/L.

The daily maximum discharge to the sanitary sewer is estimated to be 1,300 gallons per day.

Based on the nature of the process, no monitoring is required at this discharge point.

Building 431 - Shop 67 - Air Pump Washing (67-431-009)

Pumps are hand washed with detergent. The rate of discharge to the sanitary sewer is a daily maximum of 5 gallons per day. At the time of sampling, this wastewater exhibited a total petroleum hydrocarbon concentration of 1.8 mg/L, a zinc concentration of 0.91 mg/L, a copper concentration of 0.14 mg/L, and a chromium concentration of 0.12 mg/L.

Based on the small quantity of flow and the nature of the process, no monitoring is required at this discharge point.

Building 431 - Shop 67 - Evaporating Dish Cleaning (67-431-010)

This part of Shop 67 is employed in the hand cleaning, using detergent, of one-inch diameter stainless steel evaporating dishes. The dishes may have some residual petroleum hydrocarbon remaining from the evaporation of samples. The daily maximum discharge from this point is estimated to be 6 gallons per day.

Based on the small quantity and the nature of the process, no monitoring is required at this discharge point.

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Building 431 - Shop 67 - Flow Calibrators (67-431-011)

A daily maximum of 15 gallons per day is generated from the calibration of flow meters using two calibrators.

Based on the small quantity of flow and the nature of the process, no monitoring is required at this discharge point.

Building 431 - Code 135 - Photo Developer Parts Maintenance Cleaning (135-431-203-001)

The wastewater from this discharge results from the cleaning of photographic developer parts during the maintenance of the Kodak X Development Processor. The process uses Shaklee's Basic H cleaner, and the wastewater contains residual developer and fixer rinsed off developer parts. The estimated daily maximum volume of discharge to the sanitary sewer is 40 gpd.

Based on the nature of this process, no monitoring requirements have been placed in the permit for this discharge point.

Building 431 - Code 135 - Non-Destructive Testing X-ray Development Rinse Water (135-431-203-002)

Discharge from the X-ray developer itself is discharged as hazardous waste. Discharge to the sanitary sewer from the rinse process contains traces of developer and fixer. The estimated daily maximum discharge to the sanitary sewer is 200 gallons per day.

The spent developer and fixer are routed through a silver recovery unit. The effluent from this unit is routed to the main industrial wastewater pretreatment unit or off-site for disposal/recycling.

Building 431 – Non-Contact Cooling Water from Naval Tactical Data Center (431-NTDS)

A recent economic evaluation of the non-contact cooling water associated with the Naval Tactical Data Center indicated an unacceptably long payback period for a project to replace the once-through flow with an air-cooled heat exchanger. Therefore, the flow of non-contact cooling water will be retained until further analysis indicated improved economic feasibility of elimination of this discharge. The maximum daily flow is estimated to be 3,350 gallons per day.

**BUILDING 435 - CENTRAL FIRE STATION, CAFETERIA, AND MACHINE LOBBY**

Building 435 - Shop 51 - Braze Flux Rinsing (51-435-001)

Leak proof, soldered metal boxes used to contain electrical components are fabricated in this shop. Brazing flux used to clean the metal boxes prior to soldering is rinsed off in the sink in this shop. The estimated discharge of 2,500 gallons per year is discharged to either the sanitary sewer or the pretreatment facility in Building 871 based on analytical results. The daily maximum flow is estimated to be 20 gpd. As brazing is considered to be an allied process in the metal finishing standards, this discharge point is subject to the most stringent of categorical and local standards. Due to the small discharge flow volume, no monitoring is required at this discharge point.

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Building 435 - Code 1113 - Cafeteria Food Preparation Kitchen Grease Trap (1113-435-001)

The combined discharge from one row of six-each deep sinks and one row of two-each deep sinks and a commercial dishwasher in the shipyard cafeteria is designated as 1113-435-001. These units discharge through a grease trap which has an injection of Flow Mate drain cleaner at a rate of approximately 200 gallons per year. The daily maximum discharge from the sump serving these units is estimated to be 2,200 gallons per day.

No sampling is required as the effects of oil and grease would impact the Navy more seriously than the POTW, due to grease adhering to the inner surface of sewer lines within the shipyard property.

**BUILDING 437 - HOBBY SHOP**

Auto repair parts washing is performed at this building.

Building 437 - Code 820 - Auto Parts Steam Cleaning (820-437-001)

Auto work is performed in this shop by military and civilian personnel. The inside floor and outdoor patio on the north side of Building 437 are serviced by an oil water separator which drains to the sewer system. A steam cleaner is used in the patio which drains to the oil water separator. Oil and grease have been measured at concentrations as high as 73 mg/L. The maximum daily flow is estimated as 200 gpd. Monitoring for oil and grease is not required as the effects of excessive oil and grease would be borne by the shipyard, as opposed to the POTW due to grease adhering to the inner surface of sewer lines within the shipyard property.

**BUILDING 452 - FORGE SHOP**

Quench water and furnace cooling water are generated at this building.

Building 452 - Shop 06 - Respirator/Face Shield Washing (06-452-001)

Shop 06 washes respirators using one half cup of Cal-Suds detergent and one half cup of bleach per load. Three Speed Queen washers are used. Each washer uses 16 gallons of water per load. A dishwasher is used to clean face shield brackets, burning goggles and welder hoods using two tablespoons of Cal-Suds per load. The daily maximum discharge is estimated to be 300 gallons per day.

Based on the nature of this operation, no monitoring requirements have been placed in the permit.

Building 452 - Shop 37 - Forge Shop Quench Water (37-452-001)

Separate oil and water quench tanks are used in the forge shop. The oil is stored in double-walled containers. Quench water collects in a collection sump and is discharged to the sanitary sewer. Approximately 100 gallons per quench are used. The frequency of quench operations varies from one quench per day to one quench per month. The daily maximum flow is estimated to be 100 gpd. Analysis of the quench water has indicated concentrations of metals to be less than 0.1 milligrams per liter.

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No monitoring is required as the effects of any excessive oil and grease discharge would be mainly borne by the shipyard, as opposed to the POTW due to grease adhering to the inner surface of sewer lines within the shipyard property.

Building 452 - Shop 37 – Non-contact Cooling Water for Furnace Fans (37-452-002)

Non-contact cooling water is used to cool furnace fans. A closed loop cooling system has been designed and has been scheduled to be constructed. The start of construction is expected to be during the fall of 2002. The construction is expected to be completed in the spring of 2003. The wastewater from this cooling process is used in the quench tank to the extent needed. The daily maximum flow is estimated to be 100,000 gpd. Following completion of construction, this flow is expected to be reduced to that consistent with required intermittent blowdown of the cooling system.

Due to the fact that the closed-loop cooling system is scheduled to be started within weeks of the proposed issuance of this permit, no flow monitoring requirements have been placed in the permit for this sample point.

Building 452 - Shop 37 – Forge Shop Steam Condensate (37-452-003)

Steam condensate from the steam-powered yellow and blue forge hammers is contaminated with small amounts of oil from lubrication of the cylinder walls. The oil & grease concentration is expected to be less than 15 mg/L. The steam pump discharges approximately 3.5 gallons each time it turns on. The pump discharges once each fifteen minutes when the hammers are inactive and once every five minutes when the hammers are active. The maximum daily discharge from this sample point is expected to be 1,000 gallons per day. Due to the relatively small flow and the nature and low concentration of pollutants expected from this site, no sampling requirements have been placed in the proposed permit.

**BUILDING 453 - CHEMICAL LABORATORY**

Building 453 - Shop 134 - Dissolved Oxygen Ampoule Testing Solution (134-453-002)

Dissolved oxygen ampoules are used to test for dissolved oxygen aboard ships. As part of a receipt inspection program, these ampoules are tested for conformance with specifications. The waste stream consists of demineralized water with maximum concentrations of 40 mg/L ammonia, 10 mg/L hydrazine, and 5 mg/L morpholine. pH varies between 9 and 10. The daily maximum discharge is expected to be 50 gallons per day. Due to the small volume of the discharge and the low likelihood that it would contain pollutants of concern in environmentally significant amounts, no monitoring is required.

**BUILDING 455 - EQUIPMENT SHOP 02**

Building 455 - Shop 2 - Transportation Shop Mechanical Car Wash Facility (02-455-001)

The mechanical car wash is used to wash shipyard vehicles and also receives rainwater runoff from a paved parking area. The water and detergent from this washer are recycled many times before disposal by catch basin through an oil water separator. The wash water is filtered prior to discharge to an oil/water separator. The oil water separator is checked two times per year and cleaned as necessary. Daily maximum flow is estimated at 1,200 gpd. Oil and grease analysis has indicated concentrations of 16 mg/L.

Oil and grease sampling is not required for this discharge point as the main effects of excessive oil and grease would be borne by the shipyard, as opposed to the POTW due to grease adhering to the inner surface of sewer lines within the shipyard property.

Building 455 - Shop 2 - Transportation Shop Hand Car Wash Facility (02-455-004)

The hand car wash used to wash shipyard vehicles also receives rainwater runoff from a paved parking lot on the west side of Building 455. The water is discharged to a catch basin and an oil water separator prior to disposal to the sanitary sewer. The daily maximum flow is estimated at 600 gpd. Oil and grease analysis has indicated concentrations of 79 mg/L. The oil/water separator is checked two times per year and cleaned as necessary.

Oil and grease sampling is not required as the effects of excessive oil and grease would be borne by the shipyard, as opposed to the POTW due to grease adhering to the inner surface of sewer lines within the shipyard property.

Building 455 - Shop 98 - Parts Steam Cleaning (98-455-001)

A steam cleaning waste stream and surface water runoff from a paved area on the east side of Building 455 are discharged to the sanitary sewer through an oil water separator. The volume of discharge is estimated as 100,000 gallons per year based on a rainfall of 40 inches in the outdoor steam clean area. The daily maximum flow is estimated at 600 gpd. The oil/water separator is checked two times per year and cleaned as necessary. Oil and grease sampling is not required as the effects of excessive oil and grease would be borne by the shipyard, as opposed to the POTW due to grease adhering to the inner surface of sewer lines within the shipyard property.

**BUILDING 457 - RIGGERS AND PAINT SHOP**

Insulation work tool rinse water, metal quench water, glass cutting, glass sanding, and sign production silk screening wastewater are generated at this building.

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Building 457 - Shop 71 - Ball Valve Teflon Coating Quench Tank (71-457-001)

Titanium, stainless steel, and nonel ball valves are coated with Teflon, heated in a baking oven, then quenched in a tank of water. The daily maximum discharge is estimated to be 200 gallons per day. Due to the small volume of the discharge and the low likelihood that it would contain pollutants of concern in environmentally significant amounts, no monitoring is required.

Building 457 - Shop 71 - Varnish Room - Glass Face Shield Belt Sander Trickle Water (71-457-002)

The varnish room belt sander has a 0.5-gpm water trickle applied when running. The daily maximum flow is estimated to be 20 gpd.

Based on the nature of the above operation and the small volume of flow, no monitoring requirements have been included in the permit for the above sampling point.

Building 457 - Shop 71 Varnish Room - Glass Face Shield Cutoff Saw Trickle Water (71-457-003)

The varnish room cutoff saw is used to cut glass and has a 0.5 gpm flow when in operation. The daily maximum flow is estimated to be 50 gpd.

Based on the nature of the above process and the small volume of flow, no monitoring requirements have been included in the permit for this sample point.

Building 457 - Silk Screen Washing With Ivory Scouring Powder (71-457-004)

Silk screens are washed with Ivory Scouring Powder in order to remove Ulano poly material and Ulano Developer residue. The daily maximum flow is estimated to be 100 gallons per day.

Due to the nature of the above process, no monitoring requirements have been placed in the permit for the above sample point.

**BUILDING 460 - SHIPFITTERS AND WELDER SHOP**

Building 460 - Deionized Water Production Backwash (26-460-002)

Potable water is processed through a mixed media filter, an activated carbon filter, a water softener, and reverse osmosis units to produce makeup water for a thermal cutting machine. The backwash water and concentrate contain hardness, mainly calcium carbonate and chloride. The daily maximum flow is estimated to be 300 gallons per day.

Due to the nature of the above discharge, no monitoring requirements have been placed in the permit for the above sample point.

**BUILDING 462 - TEMPORARY SERVICE WAREHOUSE**

Hose hydro-testing, braze quenching, chlorinated valve sterilizing water, and chlorinated hose testing and sterilizing water are generated at this building. Hoses hydro-tested are those used for gas welding.

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Building 462 - Shop 99 - Regulator/ Hose Test Steam Condensate (99-462-001)

Steam condensate from regulator and hose testing are discharged from this drain. The maximum daily flow is estimated to be 100 gpd. The hoses and regulators used are those for gas welding.

Due to the nature of the above process, no monitoring requirements have been included in the permit for the above discharge point.

Building 462 - Shop 99 - Braze Quench Sink (99-462-002)

This tank is used to quench brazed pipe joints. The maximum daily flow is estimated to be 100 gpd. The tank is discharged two times per year. Analytical data has indicated zinc concentrations of up to 0.2 mg/L.

Due to the nature of the above process, the results of sampling, and small flow volume, no monitoring requirements have been included in the permit for the above discharge point.

Building 462 - Shop 99 - Plumbing Valve Sterilization Trough (99-462-003)

This trough is used to sterilize plumbing valves with chlorinated water. The daily maximum flow is estimated to be 100 gallons per day. Three cups of chlorine per 50 gallons of water are used.

Based on the nature of the above process and the small volume of water discharged, no sampling requirements have been included in the permit for the above discharge point.

Building 462 - Hose Pressure Hose Testing and Sterilization Trough (99-462-004)

High pressure water with a concentration of 500 ppm chlorine is used for testing and sterilizing of grade A/C water, potable water, and sanitary sewage hoses. The daily maximum flow is estimated to be 400 gallons per day.

Based on the nature of the above process, no monitoring is required in the permit at the above discharge point.

Building 462 - Fresh Water Hose Flush (99-462-005)

A daily maximum of 400 gallons per day is estimated to be discharged to the sanitary sewer when this site is in use. The Grade A water used in this process is clean and the pollutants introduced to the water from the cleaning are expected to be minor in nature.

Due to the nature of the above process and the small flow, no sampling is required for this discharge point.

Building 462 - High Pressure Air Hose Flush (99-462-007)

High pressure air hoses are flushed with a So Sure detergent solution (1/2 ounce of So Sure per 15 gallons of water). The daily maximum flow is estimated to be 15 gallons per day. Due to the nature of the above process and the small flow, no sampling is required for this discharge point.

**BUILDING 469 - HEAVY FORGE SHOP**

Dye penetrant rinse water from propeller testing is generated at this building.

Building 469 - Shop 37 - Propeller Dye Penetrant Testing Rinse (37-469-001)

Penetrant dye is applied to propellers in this shop and rinsed off at the end of the test. An average propeller uses approximately 16 ounces of dye penetrant per test and approximately 75 gallons of rinse water is employed per test. The daily maximum discharge is estimated to be 120 gallons per day.

Due to the nature of the above process and the small volume of discharge, no monitoring requirements have been placed in the permit for this discharge point.

**BUILDING 480 – DIVER SHOP**

Building 480 - Shop 740 – Diver Shop Laundry Room (740-480-001)

One washing machine is employed in the Diver Shop Laundry Room. Approximately two loads of laundry are cleaned per week. The laundered items consist of towels, hat liners, and other diving-related items. The maximum daily discharge is estimated to be 45 gallons per day.

Due to the nature of the above process and the small volume of discharge, no monitoring requirements have been placed in the permit for this discharge point.

**BUILDING 495 - WELDING SHOP**

Building 495 - Shop 6 - Welding Equipment Wire Filter Ultrasonic Cleaning (06-495-001)

In this shop, wire filters used in welding machines are cleaned using one gallon of water with So-Sure detergent for each batch. The filters are used in an ethylene glycol/water solution. Typically, this water is discharged to the sewer two times per year. The daily maximum discharge is expected to be one gallon per day. Due to the small volume of this wastewater and the small probability that it would contain environmentally significant concentrations of pollutants, no monitoring is required at this sample point.

Building 495 - Shop 26 - Gas Hose Leak Test Tank (26-495-001)

Gas hoses are submerged in water to detect leaks. The water in the sink is discharged approximately two times per year. The maximum daily discharge is approximately 10 gallons per day. Due to the nature of the above process and the small volume of flow, no monitoring requirements have been placed in the permit for this discharge point.

**BUILDING 500 - ANTENNA REPAIR SHOP**

Parts cleaning soak tank and hydro-testing tank water are generated at this building.

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Building 500 - Shop 67 - Sonar Cleaning Soak Tank (67-500-001)

This shop uses 105 gallons of dishwashing soap per year to clean transducers, hydrophones, and antennas during repair. The daily maximum discharge is estimated to be approximately 100 gpd.

Due to the nature of the above process and the small volume of flow, no monitoring requirements have been placed in the permit for this discharge point.

Building 500 - Sonar Hydro-test Tank (67-500-002)

These tanks are used to hydro-test transducers, hydrophones, and antennas following repair. The daily maximum discharge is estimated to be 600 gpd.

Due to the nature of the above process and the small volume of flow, no monitoring requirements have been placed in the permit for this discharge point.

**BUILDING 502 - BOWLING ALLEY AND GYMNASIUM**

Laundry wash and rinse water, food service dish washing, and latex paint brush cleaning wastewaters are generated at this building.

Building 502 - Code 820.51 - Latex Paint Brush Rinsing Sink (820-502-002)

Paint brushes used in building maintenance are occasionally cleaned in this sink. The daily maximum discharge is estimated to be 100 gallons per day. Touch-up painting is done approximately two times per year.

Due to the nature of this process, no monitoring is required.

Building 502 - Code 820.35 - Latex Paint Brush Rinsing Sink (820-502-005)

Paint brushes used in building maintenance are occasionally cleaned in this sink. In addition, one clothes washing machine is located at this discharge point. The daily maximum discharge is approximately 100 gpd. Touch-up painting is done approximately two times per year. Due to the nature of this process, no monitoring is required at this sample point.

**BUILDING 506 - NAVAL DENTAL CLINIC**

Building 506 – Dental X-ray Film Development Rinse Water (NDC-506-001)

The rinse water from the dental X-ray film processor is sent to the sanitary sewer. The fixer and the developer are collected to be either treated at the Industrial Wastewater Pretreatment Facility (Building 871) or sent off-site for disposal as hazardous waste. Monitoring for silver is not required due to the low rate of discharge from this site. The daily maximum discharge to the sanitary sewer is expected to be one hundred gallons per day.

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PUGET SOUND NAVAL SHIPYARD*

Building 506 - Dental Unit Wastewater (NDC-506-002)

The Naval Dental Clinic provides services for Navy personnel. The use of dental amalgam may cause minute amounts of mercury to be discharged. Due to the small volume of service, it is estimated that a maximum of one gallon of wastewater is generated per week.

Monitoring for mercury will not be required as the Navy is in the process of installing a mercury recovery unit. The unit is of the same type which King County has approved for demonstration of compliance with mercury limitations. At the conclusion of the operating day, a timer activates a pump to discharge wastewater from the separator. Solid amalgam particles remain trapped within the separator, while soluble mercury is removed as the water is pumped through an adsorbant column containing a mercury-specific adsorbent material.

**BUILDING 818 - AIR COMPRESSOR BUILDING**

Compressed air cooling water is generated at this building.

Building 818 - Air Compressor Cooling Tower Blowdown Water (900SCE-818-001)

The air compressing facility is cooled by non-contact cooling water. The cooling water is cooled by an air water interface and is cycled many times over prior to discharge. The purpose of the periodic discharge is to reduce the hardness in the cooling water that builds up due to evaporation. Cooling tower conditioner is composed of Chemtreat CL-1462 (mainly tolytriazole), Chemtreat CL-2150 (active ingredient: 5 chloro-2 methyl-4 isothiazo-3-one), and Chemtreat CL2111 (active ingredient: glutaraldehyde).

The daily maximum discharge to the sanitary sewer is estimated to be 1,000 gallons per day.

Due to the nature of the above process, no monitoring is required for the above sample point.

**BUILDING 847 - BACHLOR OFFICER'S QUARTERS (BOQ)**

Building 847 - Bachelor Officer's Quarters Laundry Room (800-847-002)

Six washing machines are located in this building to support BOQ residents. Sixteen gallons of water are used per wash cycle per washer. The daily maximum discharge from this sample point is estimated to be 1,200 gallons per day. Due to the domestic nature of this discharge, no sampling is required.

**BUILDING 850 - ENGINEERING MANAGEMENT**

Building 850-Code 1385-Microfilm Developer Silver Recovery Unit (1385-850-003)

Code 1385 has a microfilm processing unit. The effluent from this microfilm process consists of spent photographic developer, fixer, and rinse water. The wastewater is sent through a silver recovery unit prior to being discharged to the sanitary sewer. The photo processing machines in this room are estimated to discharge a daily maximum of 30 gallons per day.

Due to the small volume of this discharge, testing and analysis for silver are not required at this sample point.

**BUILDING 850A - ENGINEERING MANAGEMENT EXTENSION**

Film developing wastewater is generated at this building.

Building 850A - Code 203 - Photo Development Film Processor (203-850A-001)

This film processor processes color negatives, color slides, and black and white negatives. The color process uses the Flexicolor line of fixers and developers. The color slide process uses the Flexicolor line of stabilizers, and the E6 line of developers and fixers. The black and white process uses a D76 developer and a Rapid Fi fixer. The daily maximum daily discharge to the sanitary sewer was approximately 16 gallons per day in the recent past. Recently, the discharge volume has decreased to an average of 8 gallons per month.

The silver concentration at this sample point has been sampled and the analytical results have indicated a silver concentration of 1.58 mg/L.

Based on the small flow of the above process, no monitoring is required at this point, provided that the Navy maintains a silver recovery unit at this sample point.

Building 850A - Code 203 - Waterless Color Paper Development Still Condensate (203-850A-005)

A waterless color paper development unit is employed at this discharge point. It uses very little water. The fixer, developer, and small amounts of rinse water are sent to the distillation unit to be evaporated. The vapor condenses and becomes the discharge. The most recent sample analysis indicated a silver concentration of less than 0.1 mg/L. The daily maximum discharge is expected to be one gallon per day.

Due to the small volume of the discharge and the condensate nature of the effluent, no sampling is required at this discharge point.

**BUILDING 856 - REPAIR SHOP**

Building 856 - Shop 56 - Pipe/Pump Hydro-testing (56-856-001)

The discharge results from the testing of pre-cleaned pumps, copper tubing, stainless steel tubing, and tygon and nylon braided tubing. The testing is performed in test sinks. The daily maximum discharge is estimated to be 200 gallons per day. The pH has been measured to be 6.7, and no metals were detected at the 0.1 mg/L detection level.

Based on the nature of the above process and sampling data, no monitoring requirements have been included in the permit for the above sampling point.

Building 856 - Shop 90 - Braze Flux Hot Water Soak Tank (90-856-001)

The hot water soak tank is used to clean flux residue off pipes following brazing. The tank is discharged approximately once each year. The daily maximum discharge is estimated to be 1,800 gallons.

Based on the nature of the process and frequency of discharge, monitoring requirements have been included in the permit for copper, chromium, lead, and zinc. The limitations for these metals are based on local limits calculations.

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Building 856 - Shop 90 - Pipe/Tubing TSP Cleaning Rinse Water (90-856-002)

The tanks in this shop are used for the degreasing of copper, stainless steel, steel, and monel pipes and pipe fittings as well as Tygon hoses.

Trisodium phosphate is added to tank number 1 at a strength of 1.7 to 2.5 ounces per gallon. The capacity of tank number 1 is 1,800 gallons. Tank number 1 is disposed of as hazardous waste approximately two times per year and is not discharged to the sanitary sewer.

Tank number 2 is a hot water rinse tank and also has a capacity of 1,800 gallons. The first water rinse from this tank is directed back to tank number 1 as make-up water. The remaining portion of the rinse water is discharged to the sanitary sewer when it becomes off-specification due to buildup of particulate and trisodium phosphate. The rinse water has been measured to have an average copper concentration of 0.12 mg/L.

The daily maximum discharge is 2,000 gallons per day. The discharge is termed "Proof Flushing." The fittings are then rinsed with Grade A water by attaching them to a water supply manifold.

Based on the nature of the process, monitoring requirements have been included in the permit for copper, chromium, lead, nickel, and zinc. The limitations for these metals are based on local limits calculations.

Building 856 - Shop 90 - Ultrasonic Parts Cleaner (90-856-003)

Parts are cleaned in the ultrasonic cleaner using non-ionic or EDTA detergent. The daily maximum discharge is estimated to be 30 gallons per day. Based on the nature of the above process and small volume of the discharge, monitoring requirements have not been placed in the permit for the above discharge point.

**BUILDING 857 - SHEETMETAL SHOP**

Aluminum cleaning hot water rinse and photographic development rinse water are generated at this building. Discharges 17-857-001 through 007 are associated with aluminum passivation.

The tanks located in the sheet metal shop are:

- Tank 1: passivation degreaser tank
- Tank 2: passivation hot water rinse
- Tank 3: sodium hydroxide etch
- Tank 4: cold water dead rinse
- Tank 5: de-oxidizer tank
- Tank 6: cold water dead rinse
- Tank 7: hot water dead rinse

Building 857 - Shop 17 - Passivation Oakite DL Degreaser (17-857-001)

This degreaser tank is used in the passivation process. The entire contents of this tank are disposed of as hazardous waste. Therefore, although assigned a discharge point number, this discharge point does not appear under the list of authorized discharge points in the permit.

*FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-7374  
PUGET SOUND NAVAL SHIPYARD*

Building 857 - Shop 17 - Passivation Hot Water Rinse (17-857-002)

This hot water rinse tank is used in the passivation process. The daily maximum flow is estimated to be approximately 750 gallons per day. Analytical data submitted with the application indicate an average zinc value of 0.08 mg/L in the effluent. This discharge is subject to the most stringent of categorical metal finishing standards and calculated local limits.

Building 857 - Shop 17 - Oakite 160 Etch (17-857-003)

When changed out, the contents of the Oakite 160 etch tank are disposed of as hazardous waste (i.e., hauled to a TSD facility as opposed to being disposed of to the sanitary sewer).

Building 857 - Shop 17 - Oakite 160 Etch Cold Water Rinse (17-857-004)

This rinse tank is associated with the passivation process. The rinse water is discharged to the sanitary sewer. The daily maximum discharge is estimated to be 1,500 gallons per day. Data submitted with the application indicates absence of detectable heavy metals at the 0.1 mg/L level. This discharge is subject to the most stringent of categorical metal finishing standards and calculated local limits.

Building 857 - Shop 17 - Oakite LNC Deoxidizer (17-857-005)

This deoxidizer tank is associated with the passivation process. When changed out, the entire contents of this tank are disposed of as hazardous waste (i.e., hauled to a TSD facility as opposed to being disposed of to the sanitary sewer).

Building 857 - Shop 17 - Oakite LNC Cold Water Rinse (17-857-006)

This cold water rinse is associated with the passivation process. This rinse water is discharged to the sanitary sewer. The daily maximum flow is estimated to be 5,400 gallons per day. This discharge is subject to the most stringent of categorical metal finishing standards and calculated local limits. Zinc concentrations in this rinse water have been measured to be as high as 0.24 mg/L.

Building 857 - Shop 17 - Oakite LNC Hot Water Rinse (17-857-007)

This hot water rinse is associated with the passivation process. The daily maximum discharge is estimated to be approximately 750 gallons per day. This discharge is subject to the most stringent of categorical metal finishing standards and local limits. Cadmium, chromium, copper, lead, nickel, and zinc concentrations have been measured to be less than 0.1 mg/L.

Building 857 - Shop 17 - Total Flow from Passivation Process (17-857-008)

This sample point is established as means of reporting flow for the combined passivation process flows described above for sample points 17-857-2,4,6, and 7. A flow limitation of 8,400 gallons per day has been established for this discharge point.

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Rotoclone for Photo-etch Area (ROTO-17-857-001)

This rotoclone provides ventilation for the photo-etching process area. The water in the rotoclone traps minute amounts of metal dust which may be vented from the photo-etching process. The estimated daily maximum discharge from this rotoclone is 7,800 gallons per day. Due to the nature of this process, no sampling requirements for pollutants have been included for this discharge point.

Rotoclone for Aluminum Passivation Room (ROTO-17-857-002)

This rotoclone provides ventilation for the aluminum passivation area. It traps and discharges water which may become contaminated with process contaminants removed from the air in the aluminum passivation room. The contaminants are expected to mainly consist of sodium hydroxide, nitric acid, ferric sulfate, and sodium carbonate. The estimated daily maximum discharge from this rotoclone is 10,700 gallons per day.

Due to the nature of this process, no sampling requirements have been included for this discharge point.

Rotoclone for Welding Area (ROTO-17-857-003)

This rotoclone provides ventilation for the welding area. The rotoclone discharges water which may become contaminated with process contaminants removed from the air, mainly ferrous alloys and their oxides. The estimated daily maximum discharge from this rotoclone is 10,700 gallons per day. Due to the nature of this process, no sampling requirements have been included for this discharge point.

Rotoclone for Baking Oven (ROTO-17-857-004)

This rotoclone provides ventilation for the baking oven. The baking oven is used to dry parts that have been painted. The rotoclone discharges water which may become contaminated with process contaminants removed from the air. The estimated daily maximum discharge from this rotoclone is 2,000 gallons per day. Due to the nature of this process, no sampling requirements for pollutants have been included in the permit for this discharge point.

**BUILDING 863 - NEX**

One-Hour Film Development - Developer (500-863-001)

The Noritsu Model 130 is used as the one-hour film developing machine. The Noritsu Model 1501 is used at the one-hour paper photograph developing machine. The developer waste stream from these two machines combined is expected to have a daily maximum discharge of less than 10 gallons per day. As virtually the entirety of the silver content is expected to be contained in the fixer, no monitoring for silver is required at this sample point.

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One-Hour Film Development - Fixer (500-863-002)

The Noritsu Model 130 is used as the one-hour film developing machine. The Noritsu Model 1501 is used at the one-hour paper photograph developing machine. The fixer-related portion of the waste stream from these two machines combined is expected to have a daily maximum discharge of less than 10 gallons per day. Due to the small volume of this discharge, no monitoring is required for silver.

**BUILDING 865 - BACHELOR ENLISTED QUARTERS**

Laundry service wash and rinse waters are generated at this building.

Building 865 - Code 800 - Bachelor Enlisted Quarters Laundry Room (800-865-001)

Twenty industrial clothes washers are available for operation 24 hours per day, Monday through Friday. The daily maximum discharge is expected to be 3,800 gallons per day. The discharge is not pretreated prior to discharge to the sanitary sewer.

Based on the nature of the above discharge, no monitoring requirements have been included for the above discharge point.

**BUILDING 866 - ENLISTED DINING FACILITY**

Food production dishwashing water is generated at this building.

Building 866 - Code 815 - Food Preparation Galley Grease Trap (815-866-001)

This food preparation area serves an enlisted mess hall. Food preparation wastes pass through a grease trap, prior to discharge to the sanitary sewer. The daily maximum discharge is estimated to be 400 gallons per day.

Oil and grease limitations have not been included as the consequences of excess oil and grease would be mainly borne by the shipyard, as opposed to the POTW, due to grease adhering to the inner surface of sewer lines within the shipyard property.

Building 866 - Code 815 - Dining Facility Dishwasher (815-866-002)

This dishwasher serves an enlisted mess hall. The daily maximum flow is expected to be 1,500 gallons per day.

Oil and grease limitations have not been included as the consequences of excess oil and grease would be mainly borne by the shipyard, as opposed to the POTW, due to grease adhering to the inner surface of sewer lines within the shipyard property.

**BUILDING 873 - METAL PREPARATION BUILDING**

Building 873 - Shop 31 - Buffer/Bandsaw Rotoclone (31-873-002)

The rotoclone cleans air of dust and particles from buffers and a bandsaw. This machinery is typically used to cut and grind aluminum, stainless steel, bronze, copper, and nickel. The maximum daily discharge is estimated to be 50 gallons per day. Analytical data has indicated a copper concentration of 0.4 mg/L of copper. No other priority pollutant metals were detected at the 0.1 mg/L detection limit.

Based on the nature of the above discharge, limitations have been placed in the permit for copper, chromium, nickel, and zinc. Due to the small volume of the discharge, no monitoring requirements have been included.

Building 873 - Shop 31 - Electroplating Shop (disposal of wastewater through 910-871-001)

This building contains approximately 100 process and rinse tanks. The rinse water from this shop is piped directly to the pretreatment system in Building 871. Important processes conducted in the plating shop are:

- Caustic Cleaning
- Hydrochloric Pickling of Non Ferrous Metals
- Hydrochloric Pickling of Ferrous Metals
- Nitric Acid Bright Dip
- Chrome Plating
- Pickling Tank for Stripping
- Cadmium Plating
- Silver Plating
- Cyanide Dip
- Nickel Sulfamate for Nickel Plating
- Copper Cyanide for Copper Plating
- Zinc Cyanide for Zinc Plating
- Acid Copper Tank (Copper Sulfate and Sulfuric Acid)
- Manganese Phosphate (a conversion coat)
- Aluminum Etch
- Deox
- Copper Iridite
- Sulfuric Etch (preparation tank for nickel tank)
- Tin Plating

The chemical storage room for the plating building is sloped to the center of the floor, and the drains have been sealed off.

Waste retention tanks are in the basement of the plating building. The cyanide retention tank has a capacity of 1,585 gallons and is automatically pumped to the treatment plant in Building 871. The acid/alkaline tank has a capacity of 1,780 gallons and is pumped directly to Building 871. The chrome waste retention tank has a capacity of 1,780 gallons and is plumbed directly to the treatment plant in Building 871. Waste streams associated with copper, zinc, and cadmium plating contain cyanide.

**BUILDING 874 - INDUSTRIAL WASTE DISPOSAL FACILITY**

Paper shredder dust suppression water and rainwater runoff are generated at this building.

Building 874 - Paper Shredder Dumpster Dust Suppression Water (90-874-001)

Dust suppression and wash down water are associated with the paper shredder. Shredded paper is separated in a cyclone, and the heavy debris is dropped into a dumpster. The dumpster is wetted down to suppress airborne particulates. The maximum daily flow is estimated to be 200 gpd.

Based on the nature of the above process, no monitoring requirements have been included in the permit.

Building 874 - Shop 90HM - Portable Tank and Tanker Truck Hydro-testing (90HM-874-004)

This waste stream is generated from the annual hydrostatic testing of portable hazardous waste tanks and hazardous waste tankers. These tanks and tankers are clean at the time of the hydrostatic testing. There are twelve-each 1,000-gallon tanks and two-each 3,000-gallon tankers. The daily maximum discharge is estimated to be 5,000 gallons per day. Monitoring for TTO is required at this sample point.

**BUILDING 875 - HOSE CLEANING AND TEST FACILITY**

CHT hose flushing water and hose hydrostatic testing water are generated at this building.

Building 875 - Shop 99 - Sewage/CHT Hose Steam Cleaning (99-875-001)

Sewage (CHT) hoses, fittings and portable tanks are cleaned with steam, salt water at 175 degrees Fahrenheit and detergent. The sterilization cycle uses fresh water (with chlorine added at the rate of one gallon of bleach per 150 gallons of water). Cleaning water and rinse water are pumped to the sewer from the sump. The daily maximum discharge is estimated to be 10,000 gallons per day. This discharge typically occurs four times per year. The average discharge, on those days during which discharge occurs, is 4,000 gallons per day.

Based on the nature of the above process, and the occasional nature of the discharge, no monitoring requirements have been included in the permit for this sample point.

Building 875 - Shop 99 - High Pressure Testing of Hoses (99-875-002)

Fresh water from this manifold is used to pressure test clean hoses. The water is drained to the sump after the completion of the test. The daily maximum flow is estimated to be 5,000 gallons. Hose work is intermittent in nature. At those times when hoses are being tested, this process generates 2,500 gallons per day for an entire week, typically followed by several weeks with no testing work performed. The maximum flow expected to be generated in a day is expected to be 5,000 gallons per day.

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Due to the nature of this process, as well as the intermittent nature of the discharge, and relatively low flow, no monitoring requirements have been placed in the permit for this sample point.

**BUILDING 885 - UNACCOMPANIED ENLISTED PERSONNEL HOUSING**

Laundry service water is generated in this building.

Building 885 - Code 800 - Bachelor Enlisted Quarters Laundry Room (800-885-001)

Fifteen clothes washing machines are available for operation 24 hours per day, Monday through Sunday. The daily maximum flow is estimated to be 2,900 gallons per day.

These washing machines are used by base personnel for personal clothing and are not dedicated to industrial rags or clothing.

**BUILDING 900 - STEAM PLANT**

Wastewater associated with the main boiler is treated by a plant located at the power plant and then discharged directly. The main source of wastewater discharged to the sanitary sewer is that associated with the diesel auxiliary generators and the compressors.

Building 900 - Code 900SCE (Waste Stream 900SCE-900-001) Cooling Tower Blowdown

This waste stream consists of the air compressor cooling tower blowdown. It is periodically necessary to reduce the hardness of the water in the cooling tower, which builds up due to evaporation. In addition, bleach is occasionally added to control bacterial growth. Cooling water conditioners include Chemtreat CL1462 (main active ingredient is the sodium salt of tolytriazole), Chemtreat CL-2150 (main active ingredient is 5-chloro-2-methyl-4-isothiazolin-3-one), and Chemtreat CL-2111 (main active ingredient is glutaraldehyde.). The daily maximum discharge is estimated to be 900 gallons per day.

Due to the nature of this discharge, no monitoring is required.

Building 900 - Code 953 (Waste Stream 953-900-002) Cooling Tower Blowdown

There are five cooling towers associated with the five emergency diesel generators. As these engines are auxiliary in nature, they only operate approximately twice per month. The cooling system has a filtration package, which will backwash approximately 300 gallons once every two weeks, and a blowdown system which discharges approximately 200 gallons every week. The towers are drained once per year for maintenance which requires a discharge of approximately 5,000 gallons. Thus, the total discharge to the sanitary sewer totals approximately 23,000 gallons per year.

There has never been a compliance problem associated with the chromium concentration, although at some times zinc concentrations have been significant. The most recent analytical data from this water indicates zinc concentrations of 0.14 mg/L with other metals undetected at the 0.1 mg/L level. Due to the nature of this discharge, no monitoring for pollutants is required.

**BUILDING 923 - EAST AIR COMPRESSOR BUILDING**

Cooling water from the air compressors is generated in this building.

Building 923 - Code 900SCE – Air Compressor Cooling Tower Blowdown Water  
(900SCE-923-001)

Non-contact cooling water is used to cool an air compressor. Coolant is recycled many times over before it is discharged to the sanitary sewer. The purpose of the discharge is to reduce the hardness in the cooling water that builds up due to evaporation. The daily maximum discharge is estimated to be 500 gpd.

Cooling water conditioners include Chemtreat CL1462 (main active ingredient is the sodium salt of tolytriazole), Chemtreat CL-2150 (main active ingredient is 5-chloro-2-methyl-4-isothiazolin-3-one), and Chemtreat CL-2111 (main active ingredient is glutaraldehyde).

Testing is not required as blowdown water typically contains low concentrations of metals.

**BUILDING 940 - MEDICAL CLINIC**

Building 940 - Code 063 - Medical X-ray Film Development (063-940-213-004)

The developer and rinse water from the X-ray film processor is sent to the sanitary sewer system.

The fixer is sent through a silver recovery unit. The effluent from the silver recovery unit is collected and shipped as hazardous waste due to the high concentration of silver.

The daily maximum flow of developer and rinse water combined, discharged to the sanitary sewer, is estimated to be 200 gallons per day.

Testing is required four times per year for silver.

**BUILDING 942 - UNACCOMPANIED ENLISTED PERSONNEL HOUSING**

Laundry service washing machine wastewater is discharged from this building.

Building 942 - Code 800 - BEQ Laundry Room (800-942-001)

Fifteen clothes washing machines are available for operation 24 hours per day, Monday through Sunday, for Bachelor's Enlisted Quarters residents. The daily maximum discharge is estimated to be 2,900 gpd. The above clothes washers are used for general domestic clothes washing as opposed to being dedicated to the cleaning of industrial rags and uniforms. Therefore, no sampling is required at this discharge point.

**BUILDING 944 - HAZARDOUS WASTE HANDLING FACILITY**

Rainwater runoff is discharged from this building.

Building 944 - Shop 90HM - Rainwater Holding Tank in Hazardous Waste Container Storage Area (90HM-944-001)

Rainwater collected inside the hazardous waste container storage area is pumped to a holding tank prior to discharge to the sanitary sewer. Approximately thirty discharges per year are made from this site. The daily maximum flow is estimated to be 2,000 gallons per day. Six sumps around Building 944 are used to capture rainwater. Out of four samples collected, the maximum PCB concentration encountered was 2.6 micrograms per liter.

Periodic testing for PCB's is required at this sample point. Past sampling data has indicated moderately low concentrations of metals (e.g., 0.5 mg/L for copper). Therefore, no sampling is required for metals at this sample point.

**BUILDING 961 - STORM DRAIN CLEANING DEWATERING**

Building 961 - Shop 07 - Storm Drain Cleaning Dewatering (07-961-001)

Vactor waste consisting of liquid and solid wastes removed from storm drain structures is filtered through a 100-micron filter prior to being discharged into the sanitary sewer. The discharge has been measured to contain zinc concentrations of 0.28 mg/L and barium concentrations of 0.12 mg/L. Oil and grease measurements have indicated concentrations of less than 5 mg/L. PCB's have not been detected at the one microgram per liter detection limit. The maximum discharge is estimated to be 100 gallons per day.

Due to the nature of the discharge, its limited volume, and the fact that analytical testing has not indicated the presence of pollutants in environmentally significant concentrations, no sampling is required at this discharge point.

**BUILDING 985 - CHILD CARE FACILITY**

Building 985 - Shop 800 - Little Mates Child Care Laundry (800-985-001)

Approximately twelve loads of laundry are performed per day, five days per week. Fifteen gallons of water are used per cycle. The daily maximum discharge is estimated to be 360 gallons per day. Due to the nature of this discharge, no monitoring is required at this site.

**BUILDING 1000 - BACHELORS ENLISTED QUARTERS**

Building 1000 - Shop 800 - BEQ Laundry Room (800-1000-001)

Twenty washing machines are located in the Bachelor's Enlisted Quarters for use by the residents. The daily maximum discharge is estimated to be 3,800 gallons per day. Due to the nature of this discharge, no monitoring is required at this site.

**BUILDING 1001 – BACHELORS ENLISTED QUARTERS**

Building 1001 - Shop 800 - BEQ Laundry Room (800-1001-001)

Twenty washing machines are located in the Bachelor's Enlisted Quarters for use by the residents. The daily maximum discharge is estimated to be 3,800 gallons per day. Due to the nature of this discharge, no monitoring is required at this site.

**BUILDING 1005 – NEX (NAVY EXCHANGE)**

Building 1005 - Shop 800 - NEX Laundromat (800-1005-001)

Thirty washing machines are located in the Navy Exchange laundromat. The daily maximum discharge is estimated to be 2,700 gallons per day. Due to the nature of this discharge, no monitoring is required at this site.

**BUILDING 1015 – DINING RECEPTION CENTER**

Building 1015 - Dining/Reception Center Food Preparation and Dishwashing (815-1015-001)

This waste stream is generated by food preparation and a dishwasher. Building 1015 is a catering dining facility. The daily maximum discharge is estimated to be 1,000 gallons per day. No sampling is required for oil and grease as the effects of excessive oil and grease discharge would be mainly borne by the shipyard.

**BUILDING 1017 – PHYSICAL FITNESS CENTER**

Building 1017 - Physical Fitness Center Washing Machines (815-1017-001)

Two washing machines are located in the physical fitness center. Each machine uses 16 gallons of water per wash cycle. The daily maximum discharge is estimated to be 400 gallons per day. Due to the nature of the discharge at this point, no monitoring is required.

**BUILDING 2080 – MACDONALDS RESTAURANT**

Building 2080 - Shop 800 - McDonald's Food Preparation Grease Trap (800-2080-001)

The waste stream is generated by a deep sink and dishwasher located in a MacDonald's restaurant. The sink and dishwasher discharge to a grease trap. Due to the nature of this discharge, no monitoring is required at this sample point.

**OILY WASTEWATER TREATMENT SYSTEMS (OWTS)**

Oily water treatment systems include the following:

Bilge Water Treatment System SW of Dry Dock 1 (90-OW1-001)-60,000 gpd

Bilge Water Treatment System SW of Dry Dock 2 (90-OW2-001)-60,000 gpd

Bilge Water Treatment System SE of Dry Dock 5 (90-OW3-001)-60,000 gpd

Bilge Water Treatment System South of Building 431 (90-OW4-001)-60,000 gpd

Bilge Water Treatment System SW of Dry Dock 6 (90-OW5-001)-86,400 gpd

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Oily wastewater mainly consists of bilge water, as well as some dry dock water, and is first treated by means of flotation of the oily fraction or aided settling of flocculated particles. In the first four systems listed above, the oily wastewater is passed through coalescing tubes, prior to treatment in a DAF unit where polymers, lime, and ferrous sulfate are added. The fifth system (that associated with Dry Dock 6) employs a clarifier for settling as opposed to a DAF unit. Each entire plant is located on timber cribbing which has been lined with vinyl material for spill protection.

The average flow for all OWTS (Oily Water Treatment Systems) combined is estimated to be 34,200 gallons per day. The daily maximum capacities for each of the OWTS is listed with the sample numbers immediately above.

Results of sampling effluent from the OWTS systems is shown in the table below:

<b>Parameter</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Average</b>
Total Petroleum Hydrocarbons (mg/L)	<0.1	4.4	1.1
TTO's (mg/L)	<0.01	0.223	0.04
Chromium, T (mg/L)	<0.1	<0.1	<0.1
Copper, T (mg/L)	<0.1	0.32	<0.1
Lead, T (mg/L)	<0.2	<0.2	<0.2
Nickel, T (mg/L)	<0.1	0.22	<0.1
Tin, T (mg/L)	<0.1	<0.1	<0.1
Zinc, T (mg/L)	<0.1	0.61	0.112

For purposes of calculation of the local limits, a value of 90,000 gpd was used. This is well above the average combined treated bilge water discharge of 34,200 gpd, but well below the theoretical combined capacity of these units.

Pollutants of concern include copper, zinc, oil and grease, and TTO's. Sampling requirements for chromium, lead and tin, present in the previous permit, have been removed as these pollutants have not been detected in these waste streams at the 0.1 mg/L detection level. The limitations for these compounds are based on the lesser of the calculated local limitations and the TCLP criteria for dangerous wastes. Thus, the limitations are:

cadmium	0.17 mg/L-based on local limits calculation
chromium	5.0 mg/L-based on TCLP limitation
copper	5.2 mg/L-based on local limits calculation
lead	1.3 mg/L-based on local limit calculation
nickel	3.2 mg/L-based on local limit calculation
silver	2.0 mg/L-based on AKART
zinc	5.0 mg/L-based on AKART
TTO	2.13 mg/L adapted from federal categorical limit

## **DRY DOCK PROCESS WATER COLLECTION SYSTEMS (PWCS)**

Dry Dock Process Water Collection System at Dry Dock 1 (90-DD1-002)

Dry Dock Process Water Collection System at Dry Dock 2 (90-DD2-002)

Dry Dock Process Water Collection System at Dry Dock 3 (90-DD3-002)

Dry Dock Process Water Collection System at Dry Dock 4 (90-DD4-002)

Dry Dock Process Water Collection System at Dry Dock 5 (90-DD5-002)

Dry Dock Process Water Collection System at Dry Dock 6 (90-DD6-002)

Combined Process Water Collection System for All Dry Docks (90-DD16-002)

Puget Sound Naval Shipyard has six large graving docks that are used for dry-docking Navy ships undergoing maintenance, repair, or ship breaking operations. The dry dock system includes the Process Water Collection System (PWCS), which is intended to collect water containing contaminants at levels which would cause PSNS to exceed its NPDES permit limits for discharge to Sinclair Inlet, from the dry dock floor and divert it to the sanitary sewer. The limitations for direct discharge to Sinclair Inlet are much more stringent than the limitations applicable to discharge to the sanitary sewer. Most process wastewater collected by the PWCS is expected to meet limitations for discharge to the sanitary sewer without pretreatment. Approximately 95% of the water collected on the dry dock floor is discharged to Sinclair Inlet. The water discharged to Sinclair Inlet is subject to the provisions of PSNS's NPDES permit, which is administered by USEPA.

The following are the potential sources of process wastewater collected by the PWCS:

- **Hull Pressure Washing** - Water, sometimes with detergent, is sprayed at the hull at a pressure of approximately 2,000 pounds per square inch. The hull pressure washing process is intended to remove sea growth, slime, and salt buildup from ships' hulls.
- **Contaminated Stormwater** - Stormwater which falls on the dry dock floor and comes into contact with pollutants from industrial processes.
- **Dry Dock Cleaning Water** - This wastewater consists of water used to pressure wash the dry dock before and after dry dock flooding, as well as water used to pressure wash the dry dock during a project.
- **Dry Dock Fire Watch Water** - During ship breaking and associated reclamation (recycling) of material, water is used to cool the cut lines.
- **Painting Water** - Despite minimizing this source of water by means such as spray curtains, some overspray reaches the dry dock floor and is carried away with stormwater or other miscellaneous water.
- **Miscellaneous Water** - Miscellaneous water consists of the following minor sources of wastewater:
  - Gate (caisson) Leakage of Saltwater
  - Hydrostatic Relief Flow (groundwater)
  - Vessel Piping/Flange Leakage (saltwater, potable water)
  - Air Conditioning and Steam Condensate
  - Emergency Eye Wash Stations
  - Freeze Protection Water (potable water)

### **Quality of PWCS Wastewater**

The table below contains a summary of metals values measured for PWCS wastewater prior to discharge to the sanitary sewer.

<b>Parameter</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Average</b>
Chromium, T (mg/L)	<0.1	<0.1	<0.1
Copper, T (mg/L)	<0.1	2.36	<0.57
Lead, T (mg/L)	<0.1	<0.2	<0.2
Nickel, T (mg/L)	<0.1	0.15	<0.1
Zinc, T (mg/L)	<0.25	5.32	1.27

Monitoring is required for chromium, copper, lead, nickel, tin, and zinc. Although chromium and lead have not been detected in this effluent at the 0.1 mg/L level, sampling is required due to the association of these metals with paints, including bottom paints. Limitations are based on local limitations.

### **Treatment of PWCS Wastewater**

PWCS water first passes through sediment traps on the dry dock floor, which removes the heavy sediment. After this step, approximately 95% of PWCS water meets standards for direct discharge. A turbidity meter system is used to segregate wastewater needing further treatment. Low turbidity wastewater is discharged to Sinclair Inlet, or, if certain processes are occurring in the dry dock, to the sanitary sewer. High turbidity wastewater is diverted to collection tanks for treatment.

The wastewater which is diverted to the tanks for treatment may be treated in either the Waste Water Filtration Equipment (WWFE) or Oily Water Treatment System (OWTS). If the maximum flow limitation for the day has been reached, the process water will be discharged to Sinclair Inlet or retained for discharge to the sanitary sewer the next day.

The Waste Water Filtration System employs a 250-micron rotary strainer followed by a one-micron pressure filter.

### **Flow Limitation for PWCS Wastewater**

The daily maximum flow limitation for PWCS wastewater has been established for all dry docks combined at 260,000 gallons per day. The Navy is required to report the sum of the PWCS wastewater discharges for all dry docks and to report the sum for sample point 90-DD7-002, which has been established for flow limitations and reporting - only. There is no actual Dry Dock Number 7.

## **DRY DOCKS 1 THROUGH 6 HYDRO-BLASTING/PRESSURE WASHING WATER**

Dry Dock 1 Hydro-blast/Pressure Wash Water (71-DD1-005)

Dry Dock 2 Hydro-blast/Pressure Wash Water (71-DD2-005)

Dry Dock 3 Hydro-blast/Pressure Wash Water (71-DD3-005)

Dry Dock 4 Hydro-blast/Pressure Wash Water (71-DD4-005)

Dry Dock 5 Hydro-blast/Pressure Wash Water (71-DD5-005)

Dry Dock 6 Hydro-blast/Pressure Wash Water (71-DD6-005)

All Dry Docks Combined Hydro-blast/Pressure Wash Water (71-DD7-005)

During hydro-blasting processes, high pressure water (approximately 33,000 psi) is used to remove paint coatings from ship hulls. Pressure wash water is applied at approximately 2,000 psi and is used to remove sea growth, slime, and salt from ship hulls.

In addition to the hydro-blasting water, the following types of wastewater may be generated during or immediately before or after hydro-blast or pressure wash operations:

- **Contaminated Stormwater** - Stormwater which falls on the dry dock floor and comes into contact with pollutants from industrial processes.
- **Dry Dock Cleaning Water** - This wastewater consists of water used to pressure wash the dry dock before and after dry dock flooding, as well as water used to pressure wash the dry dock during a project.
- **Dry Dock Fire Watch Water** - During ship breaking and associated reclamation (recycling) of material, water is used to cool the cut lines.
- **Painting Water** - Despite minimizing this source of water by means such as spray curtains, some overspray reaches the dry dock floor and is carried away with stormwater or other miscellaneous water.
- **Miscellaneous Water** - Miscellaneous water consists of the following minor sources of wastewater:
  - Gate (caisson) Leakage of Saltwater
  - Hydrostatic Relief Flow (groundwater)
  - Vessel Piping/Flange Leakage (saltwater, potable water)
  - Air Conditioning and Steam Condensate
  - Emergency Eye Wash Stations
  - Freeze Protection Water (potable water)

The hydro-blast/pressure wash and associated miscellaneous waste waters requiring treatment will be treated by the Waste Water Filtration Equipment (WWFE), which consists of a rotary strainer and a pressure filter, or the Oily Water Treatment Systems (OWTS). Detergent wash water at the fire hose will be evaluated for discharge directly into the sanitary sewer when it meets all local limits for oil and grease and metals.

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The pressure filter option includes application of the process water to a 250 micron rotary strainer followed by a pressure filter in which particles larger than one micron would be removed. The effluent from the pressure filter is discharged directly to the sanitary sewer.

The maximum daily flow per dry dock is estimated to be 180,000 gallons per day. The maximum daily flow for all dry docks combined (Sample Point 71-DD7-005) has been estimated to be 300,000 gallons per day. The actual average daily flow for all dry docks during the last three years during days in which hydro-blasting operations occurred was 40,700 gallons per day. The average daily flow for all days has been estimated to be 13,500 gallons per day. In practice, Dry Dock 6 is used for 99% of hydro-blasting operations.

In large part, the maximum flows expected from dry docks during hydro-blasting operations are dependent on storm activity during hydro-blast operations. Historically, precipitation of greater than one inch per day happens eleven days per year between October and May. During the period May through September, three days with precipitation of greater than 0.5 inches per day are expected. Based on the assumption of a one-inch storm between October and April, a maximum stormwater flow of 127,000 gallons per day was calculated. The daily maximum flow based on a 0.5 inch storm from the May/September period results in a daily maximum flow of 63,500 gallons per day.

In order to calculate the daily maximum flow for all dry docks, the figure of 80,640 gallons per day of hydro-blast water, and 50,400 gallons per day of pressure wash water, was assumed to be generated at the time of a one-inch winter storm (127,000 gallons). In addition, it was assumed that 43,200 gallons per day of miscellaneous water was being generated for a total of all flows of approximately 300,000 gallons. This limitation is placed in the permit at sample point 71-DD7-005, which refers to the combined flow of all dry docks. The rationale for this limitation is that it would be highly unlikely for all dry docks to be discharging maximum hydro-blast/pressure wash water at the same time. Therefore, the sum total of flow for all dry docks was considered to be the equivalent of the flow from a single dry dock discharging hydro-blast and pressure wash water at full capacity. Sampling for parameters other than flow is required at the individual dry dock sampling points.

The water quality for hydro-blast water with respect to copper and zinc is detailed in the table below:

<b>Parameter</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Average</b>
Copper, T(mg/L)	<0.1	0.58	0.167
Zinc, T(mg/L)	0.25	1.01	0.537

Although chromium and lead have not been detected in hydro-blast water at the 0.1 mg/L level, monitoring is required due to the association of these metals with paints, involving bottom paints.

## **DRY DOCK PUMP WELLS**

### Pump Well at Dry Dock 2 (90-PW2-001)

A sump pump inside Dry Dock 2 pumping station is used for dewatering miscellaneous sources of water collected inside the station. The water collected on a daily basis inside the pumping station includes dry dock drainage pump leakage, as well as dehumidifier water. The daily maximum flow is estimated to be 220 gallons per day. Due to the nature and small volume of this wastewater, no sampling is required.

### Pump Well at Dry Dock 4 (90-PW4-001)

A sump pump inside Dry Dock 4 pumping station is used for dewatering miscellaneous sources of water collected inside the station. The water collected on a daily basis inside the pumping station includes dry dock drainage pump leakage, as well as dehumidifier water. The daily maximum flow is estimated to be 220 gallons per day. In addition, the dock is dewatered approximately four times per year after docking evolution. At these times the dry dock dewatering pumps leak and this water is pumped into the sanitary sewer. The daily maximum flow is estimated to be 9,000 gallons per day. Due to the nature of this wastewater, no sampling is required.

### Pump Well at Dry Dock 5 (90-PW5-001)

A sump pump inside Dry Dock 5 pumping station is used for dewatering miscellaneous sources of water collected inside the station. The water collected on a daily basis inside the pumping station includes dry dock drainage pump leakage, as well as dehumidifier water. The daily maximum flow is estimated to be 220 gallons per day. In addition, the dock is dewatered approximately four times per year after docking evolution. At these times the dry dock dewatering pumps leak and this water is pumped into the sanitary sewer. The daily maximum flow is estimated to be 7,200 gallons per day. Due to the nature of this wastewater, no sampling is required.

### Pump Well at Dry Dock 6 (90-PW6-001)

A sump pump inside Dry Dock 6 pumping station is used for dewatering miscellaneous sources of water collected inside the station. The water collected on a daily basis inside the pumping station includes dry dock drainage pump leakage, as well as dehumidifier water. The daily maximum flow is estimated to be 220 gallons per day. In addition, the dock is dewatered approximately four times per year after docking evolution. At these times the dry dock dewatering pumps leak and this water is pumped into the sanitary sewer. The daily maximum flow is estimated to be 25,000 gallons per day. Due to the nature of this wastewater, no sampling is required.

## **SHT (SPECIAL HULL TREATMENT) TILE HYDRO-BLAST WATER**

SHT Hydro-blast Water at Dry Dock 1 - (99-DD1-001)

SHT Hydro-blast Water at Dry Dock 2 - (99-DD2-001)

SHT Hydro-blast Water at Dry Dock 3 - (99-DD3-001)

SHT Hydro-blast Water at Dry Dock 4 - (99-DD4-001)

SHT Hydro-blast Water at Dry Dock 5 - (99-DD5-001)

SHT Hydro-blast Water at Dry Dock 6 - (99-DD6-001)

In the process of breaking up submarines for disposal or recycling, one of the first steps is the removal of noise deadening compound and paint from the hull exterior. Although this waste stream is not expected to be generated, the Navy has requested authorization to discharge it, as the possibility remains that it may need to perform this process. The process of removal of these rubber tiles and paint has, in the past, resulted in a wastewater with the following characteristics:

zinc < 1.89 mg/L

lead < 1.00 mg/L

copper < 2.07 mg/L

nickel < 2.38 mg/L

The Navy would treat the resulting water using either the OWTS or WWFE system. The expected daily maximum volume of discharge at each dry dock would be 8,000 gallons per day.

## **HULL CUTTING WASTEWATER**

Hull Cutting Wastewater at Dry Dock 3 - (350-DD3-001)

Prior to being transferred into the Dry Dock 3 Cutting Facility, large hull sections from Navy vessels are cut into smaller sections outdoors at a location directly south of the facility. Rainwater and firefighting water used to cool the cut lines are collected from the cutting slab for discharge into the sanitary sewer. This water is similar to water collected from the Dry Dock Process Water Collection System as hull cutting activities are also performed in some dry docks. The daily maximum discharge expected from this facility is expected to be 500 gallons per day. Due to the relatively small flow generated from this activity, and the nature of this process, no sampling requirements have been placed in the proposed permit.

## **PIER D**

Pier D Laundromat (800-Pier D -001)

Forty-six washing machines are located at the Pier D Laundromat to support the Ship Force personnel which are homeported at the shipyard. The laundry water is generated from washing of domestic laundry as opposed to industrial wastewater. The maximum daily discharge is expected to be 8,700 gallons per day. Due to the fact that the wastewater will result from laundry operations conducted on domestic laundry, no monitoring is required for this discharge.

## **CONSTRUCTION DEWATERING AT INSTALLATION RESTORATION (IR) SITES**

### Construction Excavation Groundwater (CD-IR#-1-001)

Installation restoration sites are areas within the shipyard and naval station that have soil or groundwater contamination. Petroleum hydrocarbons and metals constitute the majority of the contaminants. Depending on the suspected severity of the contamination, groundwater from some such sites encountered during a construction project will be sampled prior to discharge to the sanitary sewer to ensure that local limits are met. Wastewater generated from the various installation restoration sites is subjected to treatment by settling tanks or filtration depending on the pollutant suspected or demonstrated by sampling. The daily maximum discharge for each such site has been requested by the Navy to be 25,000 gallons per day to provide for operational flexibility for construction projects. Actual flow from each site is typically not more than 5,000 gallons per day.

Due to varying information and changes in the number of installation restoration sites, the proposed permit requires that installation restoration sites which have been identified as having a reasonable potential to exceed limitations be sampled for those parameters identified as having a reasonable potential to be exceeded. The proposed permit requires that the results be reported in an annual report due on March 15 of each year for the samples collected each preceding calendar year. As previous data has indicated a good compliance history for installation restoration site discharges, the sampling frequency has been reduced to once each-100,000 gallons for each site. Sampling is not required if the rate of flow from an individual site is less than 1000 gpd or the total flow from a project is less than 10,000 gallons. The proposed permit contains actual discharge limitations as opposed to the action levels used in the existing permit.

## **CAR WASH FACILITY**

### Waste Stream (MWR - Car Wash - 001)

The facility consists of a four-bay commercial car wash. Wash water is treated by a SERVICEPACK coalescing oil water separator that has a design flow capacity of 35 gallons per minute. The treated water is expected to contain less than fifteen mg/L of oil and grease. The maximum flow is estimated to be 1,500 gallons per day. As the greater part of any adverse consequences from the discharge of oil and grease would be borne by the shipyard, no sampling is required from this facility.

### VARIOUS BUILDINGS - Gas Fired Boilers

Boiler blowdown/leakage occurs at various domestic and minor commercial buildings, such as bachelor officer's quarters, bowling alleys, and cafeterias. Due to the limited flows discharged and the nature of boiler blowdown, the individual discharge points for each of these small boilers are not listed in the proposed permit. As the discharges from these small boilers are substantially equivalent to domestic wastewater in strength and character, the Department finds that coverage is not necessary under this permit to authorize such discharges.

## **MONITORING REQUIREMENTS**

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, and that effluent limitations are being achieved (WAC 173-216-110).

The monitoring schedule is detailed in the proposed permit under Conditions S1 and S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. A more detailed discussion of monitoring requirements appears in the descriptions of the individual sample points under the Sources of Wastewater Sections.

Monthly metal samples are required to be collected from the two municipal lift stations and analyzed for metals. The purpose of these samples is to determine if any significant unidentified industrial sources of metals are occurring from the shipyard. Metals limitations at the lift station are consistent with the local limits adopted by the City of Bremerton except that the chromium limitation was set at 5.0 to keep it below TCLP criteria.

Cobalt 60 had in the past been identified in City of Bremerton sludge. Although there was no reason to believe that the minute quantities of this isotope at the concentrations found, would pose any threat to human health, the previous permit required monitoring for Cobalt 60. During the term of the existing permit, no further Cobalt 60 has been identified in City of Bremerton sludge. In addition, under sampling required under the existing State Waste Discharge Permit for Puget Sound Naval Shipyard, Cobalt 60 was not detected in shipyard effluent. Therefore, monitoring requirements for this isotope have not been included in the proposed permit. The disappearance of this isotope from sludge may be due to the discontinuance of discharge to the sanitary sewer by a former commercial East Bremerton industrial laundry facility. The laundry has been decommissioned for a number of years. Cobalt 60 is associated with reactor plants. Atomic Energy Act activities at Puget Sound Naval Shipyard are regulated by the Naval Nuclear Propulsion Program. PSNS procedures prohibit discharge of Naval Nuclear Propulsion Program regulated radioactivity to the sanitary sewer.

The principal source of radioactivity in liquids in naval reactor plants consists of trace amounts of corrosion and wear products from reactor plant metal surfaces in contact with reactor coolant water. For radionuclides with half-lives greater than one day, Cobalt 60 is the predominant radionuclide. The Cobalt 60 analyses required beginning in 1996 provided a sensitivity with a minimum detectable activity concentration of  $1 \times 10^{-8}$  uCi/mL (10 pCi/L). The results of the monthly monitoring were provided to the Department of Health by November 15 of each year in the form of an annual report. The report also included minimum detectable activity values (detection limits) for Cobalt 60, even when not detected. As Cobalt 60 was not detected during the initial year of monthly sampling, this sampling provision terminated in accordance with the provisions of the State Waste Discharge Permit. Nevertheless, the proposed permit contains a prohibition on the discharge of radioactive materials in excess of quantities of concentration set forth in WAC 246-221-190, for those radioactive materials not governed by the Atomic Energy Act.

## **OTHER PERMIT CONDITIONS**

### *REPORTING AND RECORDKEEPING*

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges [WAC 273-216-110 and 40 CFR 403.12 (e), (g), and (h)].

### *OPERATIONS AND MAINTENANCE*

The proposed permit contains condition S.4 as authorized under Chapter 173-240-150 WAC and Chapter 173-216-110 WAC. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

Puget Sound Naval Shipyard has developed Best Management Practices (BMPs) in other regulatory programs to address chemical storage and spill prevention. Certain of these conditions will serve to prevent the introduction of pollutants to the ground waters of the state, as well as prohibited discharges to the sanitary sewer system. Those BMPs which are relevant to the protection of groundwater have been submitted to the Department.

### *PROHIBITED DISCHARGES*

Certain pollutants are prohibited from being discharged to the POTW. These include substances which cause pass-through or interference, pollutants which may cause damage to the POTW or harm to the POTW workers (Chapter 173-216 WAC), and the discharge of designated dangerous wastes not authorized by this permit (Chapter 173-303 WAC).

### *DILUTION PROHIBITED*

The Permittee is prohibited from diluting its effluent as a partial or complete substitute for adequate treatment to achieve compliance with permit limitations.

### *SOLID WASTE PROVISIONS*

The Department has determined that the Permittee has a potential to cause pollution of the waters of the state by means of discharge to the POTW, or to groundwaters of the state, from leachate associated with storage of solid waste. Therefore, the proposed permit contains the requirement that solid waste be handled and disposed of in such a manner as to prevent its entry into state groundwaters or the POTW unless authorized under provisions of this permit. The proposed permit also contains the requirement that all solid waste disposal be in accordance with AKART requirements.

### *SLUG/SPILL DISCHARGE CONTROL PLAN*

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The proposed permit requires the Permittee to maintain a current plan for preventing the accidental release of pollutants to the POTW and for minimizing damages if such a spill occurs.

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The shipyard is required to maintain a Slug/Spill Discharge Control Plan for purposes of preventing the accidental release of pollutants to the POTW. A plan fulfilling the spill-related requirements was submitted by the Navy under the provisions of the State Waste Discharge Permit issued in 1996. The proposed permit requires that the Permittee review the Slug/Spill Discharge Control Plan at least once each two years and to update the plan as needed. The proposed permit also contains the requirement that the Permittee submit changes to the plan to the Department within thirty (30) days of their adoption.

In addition, the Department has determined that the Permittee has the potential for a batch discharge that could adversely affect the POTW. Therefore, a Slug/Spill Discharge Control Plan is required [40 CFR 403.8 (f)].

The Navy has already developed a separate spill plan which mainly addresses spills to surface water. Discharges to surface water are authorized and regulated under an NPDES permit issued by USEPA. Therefore, the Slug/Spill Discharge Control Plan required by the proposed permit is limited in application to discharges to the POTW.

**COMPLIANCE SCHEDULE FOR THE ELIMINATION OR REDUCTION OF  
NON-CONTACT COOLING WATER AND CLEAN STORMWATER DISCHARGES  
TO THE SANITARY SEWER**

State regulations prohibit the discharge of non-contact cooling waters and clean stormwater to the sanitary sewer in significant amounts. The existing permit contains the requirement that the Permittee submit an engineering report in which the Navy identifies all sources of non-contact cooling water and stormwater greater than 2,500 gallons per day and proposes measures to eliminate or reduce these discharges. Normally cooling tower heat exchangers are chosen as the method to address these discharges. The engineering report was due on January 15, 1998. The Navy submitted reports containing a cost analysis and designs of proposed cooling water elimination projects at Building 431 and Building 452. The water-cooled HVAC system at the Building 431 Environmental Test Laboratory was recently replaced by an air-cooled system. The economic evaluation of the Naval Tactical Data Center at Building 431 indicated a relatively long payback period of between twelve and sixteen years. The Navy plans to reevaluate the feasibility of this project in the future.

**STUDY ON REDUCTION OF SALINE DISCHARGES**

The existing permit required that the Permittee submit a study containing an examination of the sources of and possible methods for reducing the flow of saline wastewaters to the sanitary sewer. The existing permit contained the requirement that the study be submitted no later than December 1, 1998. This requirement for the study was motivated by the City of Bremerton's concern with the possibility of high salinity wastewaters resulting in hydrogen sulfide odor problems, corrosion, interference with analytical methods, and reduced wastewater reuse opportunities.

The Permittee submitted the study entitled "Results of Sanitary Sewer Salinity Study - Puget Sound Naval Shipyard - Bremerton, Washington" on November 19, 1998. The Department considers the submitted study to have fulfilled the requirement for submittal of a satisfactory study.

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Extensive sampling was conducted by the consultant (EMCON) during the performance of the study. The consultant reported that approximately 35,000 pounds of salinity were delivered to the Bremerton WWTP from PSNS on a typical day.

It was estimated that leaks in the sewer collection system in Basin 9 were responsible for approximately 6% of the total salinity received by the City of Bremerton POTW. Tidal influences were determined to have a marked effect on the concentration and mass of salinity delivered from Basin 9.

A number of berthing barges are sited at the shipyard. These berthing barges house residential units for shipyard workers. Holding tanks from the largest berthing barge (1200 residents) extant at the time of the study were pumped two times per day to the sanitary sewer. The potential load to the shipyard from this barge at the time of the study was estimated to be approximately 4,500 pounds of salinity per day, which is equivalent to 12 per cent of the total salinity delivered to the WWTP from PSNS.

Home-ported vessels also contribute to the salinity discharged from the shipyard. Assuming three ships are homeported at the same time, the consultant estimated that 75,000 gallons per day would be discharged to the POTW. The homeported vessels, based on the above assumption, would be estimated to discharge approximately 7,500 pounds of salinity per day to the POTW, which represents 21% of total salinity received at the WWTP from PSNS.

The treated bilge and ballast water discharge from the five bilge and ballast water treatment systems were estimated to be responsible for approximately eight per cent of the total salinity received at the WWTP from PSNS. The City of Bremerton and the Navy are continuing discussions regarding mitigating the possible deleterious effects of ground water on the City of Bremerton POTW.

*GENERAL CONDITIONS*

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to POTW permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. The Department recognizes that legitimate Navy security requirements may form a basis for denial of access to certain records or areas of the base. Condition G3 specifies conditions for modifying, suspending, or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G6 prohibits the Permittee from using the permit as a basis for violating any laws, statutes, or regulations. Conditions G7 and G8 relate to permit renewal and transfer. Condition G9 requires the Permittee to control production or wastewater discharge in order to maintain compliance with the permit. Condition G10 prohibits the reintroduction of removed pollutants into the effluent stream for discharge. Condition G11 requires the payment of permit fees. Condition G12 describes the penalties for violating permit conditions. Condition G13 contains a description of conditions under which the permit may be reopened for modification.

**PUBLIC NOTIFICATION OF NONCOMPLIANCE**

A list of all industrial users which were in significant noncompliance with Pretreatment Standards or Requirements during any of the previous four quarters may be annually published by the Department in a local newspaper. Accordingly, the Permittee is apprised that noncompliance with this permit may result in publication of the noncompliance.

**RECOMMENDATION FOR PERMIT ISSUANCE**

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics. The Department proposes that the permit be issued for a period of five (5) years.

**SCHEDULE OF APPENDICES:**

Appendix A - Public Involvement Information  
Appendix B - Glossary

## **APPENDICES**

### *APPENDIX A—PUBLIC INVOLVEMENT INFORMATION*

The Department has tentatively determined to reissue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public Notice of Application was published on September 6, 2000, and September 13, 2000, in the *Bremerton Sun* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on November 14, 2002, in the *Bremerton Sun* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator  
Department of Ecology  
Northwest Regional Office  
3190 160<sup>th</sup> Avenue SE  
Bellevue, WA 98008

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (425) 649-7201, or by writing to the address listed above.

*APPENDIX B—GLOSSARY*

**Ammonia**—Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

**Average Monthly Discharge Limitation**—The average of the measured values obtained over a calendar month's time.

**Best Management Practices (BMPs)**—Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

**BOD<sub>5</sub>**—Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD<sub>5</sub> is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

**Bypass**—The intentional diversion of waste streams from any portion of the collection or treatment facility.

**Categorical Pretreatment Standards**—National pretreatment standards specifying quantities or concentrations of pollutants or pollutant properties which may be discharged to a POTW by existing or new industrial users in specific industrial subcategories.

**Compliance Inspection - Without Sampling**—A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

**Compliance Inspection - With Sampling**—A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

**Composite Sample**—A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples--may be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

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**Construction Activity**—Clearing, grading, excavation, and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

**Continuous Monitoring**—Uninterrupted, unless otherwise noted in the permit.

**Engineering Report**—A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

**Grab Sample**—A single sample or measurement taken at a specific time or over as short period of time as is feasible.

**Industrial User**—A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

**Industrial Wastewater**—Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

**Interference**—A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) [including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to subtitle D of the SWDA], sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

**Local Limits**—Specific prohibitions or limits on pollutants or pollutant parameters developed by a POTW.

**Maximum Daily Discharge Limitation**—The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

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**Method Detection Limit (MDL)**—The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

**Pass-through**—A discharge which exits the POTW into waters of the state in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of state water quality standards.

**pH**—The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

**Potential Significant Industrial User**—A potential significant industrial user is defined as an industrial user which does not meet the criteria for a significant industrial user, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day; or
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g., facilities which develop photographic film or paper, and car washes).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

**Quantitation Level (QL)**—A calculated value five times the MDL (method detection limit).

**Significant Industrial User (SIU)**—

- 1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; and
- 2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, non-contact cooling, and boiler blowdown wastewater); contributes a process waste stream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority\* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement [in accordance with 40 CFR 403.8(f)(6)].

Upon finding that the industrial user meeting the criteria in paragraph two, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority\* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

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\*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

**Slug Discharge**—Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge to the POTW. This may include any pollutant released at a flow rate which may cause interference with the POTW.

**State Waters**—Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the State of Washington.

**Stormwater**—That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

**Technology-based Effluent Limit**—A permit limit that is based on the ability of a treatment method to reduce the pollutant.

**Total Coliform Bacteria**—A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

**Total Dissolved Solids**—That portion of total solids in water or wastewater that passes through a specific filter.

**Total Suspended Solids (TSS)**—Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

**Water Quality-based Effluent Limit**—A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.